



Introduction to beer

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Introduction

Beer is the oldest, most diverse and popular alcoholic beverage. The variety available is very large, and with the continuing interest in craft beers, it increases every day. Many consumers, however, don't know or have forgotten basic information about beer; for example, its origin, its ingredients, how it's made, which are the most popular styles, and how it should be purchased, stored, and consumed. With the information included here, you will be better informed about the nature of this millenary drink and the many variants that you can enjoy.

Tasting many different beers is key to understanding the styles and the variety of flavors. With a palate trained by experience you will enjoy beers as different as pilsners, doppelbocks, German wheat beers, India pale ales, stouts, Trappist ales, and lambics. Learn, explore and expand your horizons, a world of surprising variety and flavor awaits you.

Origin and ingredients

The origin of beer has been lost in time because it happened before writing developed. Archaeological data suggests that it was being made 13,000 years ago, before agriculture was developed and the first cities were founded. The first written evidence of brewing dates to Sumer, where Ninkasi was one of the deities associated with this drink; a hymn dedicated to her explains in some detail how beer was produced.

The raw material for beer was barley, one of the first plants that humans gathered and later cultivated. How our predecessors discovered that the seeds must be germinated in order to use the sugar they contain, is one of many unknown details. Similar beverages using corn (maize), millet, oats, rice, rye, sorghum and wheat appeared in Africa, China, Russia, Scandinavia, and the New World. Barley, wheat, oats and rye were used in Europe until the first prevailed during the Middle Ages and the Renaissance. All these cereals are used today to complement barley in some beer styles, while sorghum beer remains popular in Africa.

Sumer and Egypt were the main brewing centers of antiquity. In both places, many varieties of different color, flavor and alcohol content were produced. Everyday beers were simple and low in alcohol, while those made for special occasions were brewed with more care and were stronger. Paintings and reliefs found in Egyptian tombs indicate that bread and beer were frequently made at the same time and that beer was stored in clay jugs, to be drunk later using straws. The mummies of pharaohs and some citizens were accompanied by jugs of beer to drink in the afterlife.

In those times, beer and bread were essential components of daily sustenance, and in a society that operated without money, they were also part of the worker's salaries. Egypt exported beer to places as distant as Rome, and according to some sources, even to India. In Abydos there was a brewery with the capacity to produce 13,200 gallons (50,000 liters) in each production cycle.

Modern beer evolved in northern Europe and its production was for centuries a domestic task of women. Men became involved when beer began to be produced outside the home for sale in greater quantity. Beginning in the eighth century, monasteries became important centers of innovation and production. The first large-scale commercial breweries appeared during the industrial revolution, when production increased enormously and European beer traveled by sea to the New World and other continents.

The beer we consume today is the product of a long process of learning, change, innovation and adaptation to the conditions and tastes of different populations and generations. The beers of antiquity would hardly resemble the modern ones, made with technologies and strict

controls that allow us to produce them with great consistency and quality; the old ones were cloudy, thick, frequently sour, low in carbonation, of variable quality, and were consumed at room temperature or even hot.

Ingredients

Beer has four main ingredients:

1. Water- obtained from deep wells or regular drinking water. In the past, its pH and mineral content determined the type of beer that was made in a locality, today both parameters can be adjusted, allowing different styles to be brewed almost anywhere. Depending on the style, beer is 80 to 95 percent water.

2. Barley malt- partially germinated grains of *Hordeum vulgare*, a grass native to northeast Africa, the Middle East and parts of Asia. Barley is grown commercially in temperate climates. The starch stored in the seed to nourish the embryo during germination is the source of sugar for making beer. Malt contributes color and flavor; there are two main types: base malts, which contain fermentable sugar, and specialty malts, which having been heated for a longer time and/or at a higher temperature no longer contain fermentable sugar but can increase body and head retention, darken the beer, and provide intense flavors.

3. Hops- the sterile (seedless) fruit of *Humulus lupulus*, a climbing plant of the cannabis family native to Europe and North America (most sources indicate incorrectly that hops are the flower of the plant, see <https://archive.org/details/whatarehops>). Hops are cultivated commercially in temperate countries; some provide mainly bitterness, others mostly aroma, and some provide both. Bitterness comes

mainly from alpha acids present in hop resin, while aroma comes from several essential oils. Alpha acids also inhibit the growth of bacteria that turn beer sour, and thus help to preserve it. Hops became popular in Europe starting in the 10th century and finally prevailed during the mid-16th century. Their ability to preserve beer allowed it to be produced in greater quantities, stored, transported and sold in distant markets, thus increasing its economic importance. Before hops, a herbal mixture called *gruit* was used.

Some hops are known as noble hops due to the delicate aroma they impart to European lagers; the best known ones are Hallertauer Mittelfrueh, Spalt, Tettnanger (Germany) and Saaz (Czechia); the British add Fuggle and Kent Goldings. Amarillo, Cascade, Centennial, Citra, Chinook, Mosaic and Simcoe are some of the many hops grown in the United States; the first four provide notes of citrus and the last two contribute pine notes. Some hops provide aromas of tropical fruits such as guava, mango, papaya, passionfruit, and pineapple. The same hops cultivated in different places produce different aromas and flavors (*terroir*). Australia and New Zealand are also important producers of hops.

4. Yeast- single-celled fungus that ferments the sugar present in malt to produce ethyl alcohol (ethanol) and carbon dioxide. Yeast also produces other alcohols, esters, phenols and miscellaneous compounds that contribute flavor. Beer is fermented mainly by two species of *Saccharomyces* (literally sugar fungus), of which many strains have been developed. For example, strains with high attenuation rates convert most of the sugar into alcohol and carbon dioxide, producing a drier (crisp) and lighter-bodied beer, while those with low attenuation rates leave behind more sugar, producing a sweeter, fuller-bodied beer. The strains also differ in their tolerance to the presence of

alcohol, optimum temperature for fermentation, and in the variety and quantity of compounds they produce.

Adjuncts, secondary ingredients and additives

Lager production in Germany still follows a 1516 decree known as *Reinheitsgebot*, which limits beer ingredients to water, barley, hops, and yeast. Other beers may use malts from other cereals, adjuncts, secondary ingredients and additives. The most common malt after barley is wheat malt.

Adjuncts are other sources of sugar. Rice or corn are used in the fermentation of many pale lagers to lighten the beer's color, flavor and body. Different sugars are used in many English and Belgian ales (including almost all Trappist ales) to increase alcohol content without increasing body, while dark sugar and caramel are sometimes used to darken the beer and add flavor. Honey was probably one of the first adjuncts.

Fruits act as adjuncts when they participate in fermentation and as secondary ingredients when added as concentrate or juice to finished beer. Every fruit, nut, vegetable, and spice useful to us has been used at one time or another as a secondary ingredient.

Additives are compounds added to beer for various purposes. They are usually natural (produced by organisms) and must be certified for use in brewing. Natural flavors are used to add or accentuate a specific flavor, for example grapefruit. Vegetable dyes can emphasize a hue or completely change the color of a beer. Ascorbic acid (vitamin C) and sulfites act as antioxidants to stabilize the flavor of packaged beer. Gelatin and other clarifying agents precipitate yeast and proteins, thus clarifying the beer more

quickly. PGA (propylene glycol alginate) can be added to increase the duration of the foam layer.

As competition between breweries intensifies, the use of all these compounds can be expected to increase, as they help to make different beers and to keep them in good condition longer.

Brewing, characteristics and styles

Making beer begins with a recipe that specifies the amount of water and how it should be modified; the malt or malts to be used and the quantity of each one; the hop or hops to be used, the amount of each and when they should be added; the type and amount of yeast; and the temperatures required at every stage of the process. If the beer includes adjuncts and/or secondary ingredients, the amount of each and when they are added is also indicated. The cleanliness of all the equipment is crucial to avoid contamination with microorganisms that can ruin the product.

Beer production differs in details depending on the size of the brewery, from home brewers who make occasionally five gallons (3.8 liters) to industrial breweries producing thousands of gallons daily. Nevertheless, the process typically consists of the following steps:

1. Malting- barley grains are submerged in water several times over the course of one or two days and are

transferred to a controlled environment where they begin to germinate. During the next three or four days the embryo grows and several enzymes activate, including amylases (which convert starch into sugars) and proteases (which convert protein into amino acids). When the embryo reaches a certain size the grains are heat-dried (kilned) for about 24 hours to stop germination, and at this moment are called malt.

2. Milling- malts and adjunct grains (if any) are broken to a specific size in order to increase their surface area, so that enzymes have easy access to the starch and protein.

3. Mashing- the ground grains are mixed with the water and the mixture is stirred and heated for about an hour at close to 153 °F (67 °C). The duration of the process and the temperature depend on the type of beer being brewed. Some mashes begin and end at the same temperature, while in others the temperature is increased by steps (rests) that favor the action of different enzymes. During this process amylases convert starch into sugars and proteases convert protein into amino acids. The main sugars are maltose (up to 65%), maltotriose, glucose, fructose and sucrose. The product of mashing is a sugar-rich liquid called sweet wort.

4. Draining- during this step the sweet wort is separated from the milled grains, now called spent grains. In simple systems this happens by gravity through a perforated bottom, in more complex systems it takes place in another vessel called lauter tun or using a series of filters. During the process, the spent grains are sprayed (sparged) with an amount of hot water to drain most of remaining sugar. In times past, spent grains were sparged a second or even third time to produce low-sugar worts and low-alcohol

beers (1 to 2% alc/vol) adequate for daily consumption. Spent grains are frequently used as livestock feed.

Popular among homebrewers is the use of malt extract, a product available as thick syrup or flour. Using extract skips all the previous steps, the brewer dissolves it in water and starts at the next step. The main advantages of extract are savings in equipment and time, the main disadvantages are higher cost and less control over the brewing process.

5. Boiling- depending on the beer being made, the wort is boiled for one or more hours in a tank called brew kettle, which was formerly constructed of copper and with its long chimney was the most attractive element of the brewery. During this step the hops are added, as a rule bittering ones first (heat activates them) and aroma ones near the end (heat degrades them). Hops can be used fresh, dried as pellets that resemble rabbit feed, or as a thick liquid extract. Boiling converts hop alpha acids into iso-alpha acids that produce bitterness, stops the action of malt enzymes, condenses the liquid, precipitates proteins that cause turbidity, and sterilizes the wort.

When making some beers, especially India Pale Ales (IPAs), aroma hops are added at the end of this step (late hopping) or later during the brewing process (dry hopping) to increase hop aroma and flavor without increasing bitterness. The product of boiling is called bitter wort and is a solution of sugars, amino acids, proteins, minerals, vitamins, organic acids, aromatic oils, and small particles of malts and hops.

6. Whirlpooling- the bitter wort passes to a container where a whirlpool forms that concentrates particles and clarifies the liquid.

7. Chilling- the bitter wort passes to a heat exchanger which rapidly reduces its temperature to the optimum for the next step. Cooling the wort quickly reduces the probability of infection with bacteria or wild yeasts that can ruin the beer, and precipitates proteins that cause turbidity.

8. Fermentation- the wort is transferred to a tank and the yeast is added. The cells absorb the sugars and convert them into glucose molecules, the fermentation of each glucose produces two molecules of ethyl alcohol (ethanol) and two of carbon dioxide. As part of its metabolism, the yeast also produces other compounds that contribute to the aroma and flavor of beer. Fermentation typically lasts two days to several weeks, depending on the type of beer; the process is complex but can be summarized as follows.

First, the yeast becomes familiar with the new environment and prepares its metabolic machinery. It then uses the oxygen present in the wort and part of the sugar to produce a large amount of energy and multiply quickly. When the oxygen is exhausted the yeast consumes the remaining sugar using a less efficient energy-producing system (fermentation per se) that generates alcohol and carbon dioxide. Finally, due to the scarcity of food and the accumulation of wastes (one of them being alcohol) the yeast slows down its metabolism and forms clumps (flocculates) until it again finds favorable conditions. The end product of fermentation is young, immature or green beer. Most of the yeast produced during fermentation is removed at the end of the process and is disposed of in several ways, an amount may be used to make the same beer again.

9. Maturation- green beer needs to mature in order to acquire its final flavor. During this process the remaining yeast eliminates several compounds that it had produced; for example, diacetyl, which imparts a buttery flavor. In addition, during maturation suspended particles precipitate and the beer becomes more transparent. The duration of this stage varies with the type of beer; for some ales two or three days is enough, for industrial lagers two or three weeks, for more traditional lagers six or more weeks.

10. Clarification- during this step yeast cells, coagulated proteins and minute particles that cause turbidity are removed. This can be achieved by allowing the beer to rest, but to accelerate the process clarifying or fining agents, centrifugation and/or filtration are frequently used. How much the beer is clarified depends on the preferences of the brewer and the beer style; for example, pale lagers are usually filtered to render them crystalline, while wheat beers are seldom filtered and remain turbid.

11. Carbonation- most of the carbon dioxide produced during fermentation is released into the environment and must be reintroduced to give the liquid its expected effervescence. The most common options are forced carbonation and refermentation (usually called bottle conditioning although it can also happen in a can or keg). The first consists of injecting pressurized gas into a sealed container, which in small breweries is probably a keg, and in large ones a tank from which beer proceeds to packaging. The second consists of adding an amount of sugar and if necessary also yeast, the beer is packaged, and a new fermentation produces the gas. This process takes one to three weeks depending on temperature.

The amount of carbon dioxide present in beer is measured in volumes, defined as the amount of carbon dioxide present in an amount of beer. For example, a beer with 2.5 volumes of carbonation has 25 ounces (739 ml) of carbon dioxide dissolved in 10 ounces (296 ml) of beer. Carbonation varies with beer style, from less than one volume in some English bitters to more than four in some German wheat beers. The average for pale lagers and beer in general is 2.5 volumes.

In some beers, about 70 percent of the carbon dioxide is replaced by nitrogen, which produces an attractive head of very small bubbles that feel smooth and creamy. In addition, when the liquid is poured vigorously an attractive cascade of bubbles descends along the inner surface of the glass.

12. Packaging- during this process measures are taken to reduce the amount of oxygen present in the container, thus reducing the oxidation reactions that stale beer. Jetting consists of injecting the bottle with a jet of sterile water so that the beer foams up and oxygen is expelled from the space between the surface of the liquid and the top of the bottle (this space buffers pressure changes caused by temperature fluctuations).

13. Pasteurization- this process briefly exposes the beer to a high temperature that kills remaining yeast and other microorganisms that can affect aroma and flavor. Large breweries pasteurize to increase the product's shelf life, especially when it is exported long distances. Craft breweries typically do not pasteurize and depend on refrigeration to maintain the beer in good condition; these beers sometimes have on the label phrases such as keep refrigerated or enjoy fresh. The best by date for pasteurized

beer is typically 12 to 18 months, for non-pasteurized beer it is generally up to six months.

Characteristics

The following characteristics are considered when tasting and evaluating beer.

1. Color- beer may be straw-colored, yellow, golden, amber, coppery, reddish, brown or black, depending on the color of the malts (which in turn depends on the temperature and duration of drying). To make a very pale beer, only pilsner malt is used; to make a brown one, dark malt is added to the base pale malt. For intermediate colors two or more malts are combined. The main malts, from pale to dark, are: pilsner, pale, Vienna, Munich, caramel (crystal), chocolate, and black; the first four are base malts, the last three are specialty malts.

2. Clarity or transparency- beer is naturally turbid because it contains yeast, protein from the grains, and minute particles. Crystalline beer became very popular when machine-made transparent glass became widely available in the late 19th and early 20th centuries. Today many drinkers prefer some opacity.

3. Foam- the foam layer or head improves the appearance of beer and helps to perceive its aroma. Its thickness and stability depends on the amount of protein and hop resins, intensity of carbonation, alcohol concentration, how the beer is poured, and the shape and cleanliness of the glass. The foam that remains attached to the glass as the beer is consumed is known as cling, lace or Belgian lace. In some countries the foam layer is expected to be thick and long-lasting, and lace should be abundant.

4. Aroma- the aroma of beer is due to the malts, hops and some compounds produced by the yeast. The aroma of yellow beers frequently recalls bread and comes from pale malts. The aromas of caramel, nuts, coffee and chocolate found in darker beers derive from darker malts. The aromas of citrus, pine, flowers, fruits, herbs, and some spices come from the hops, and from esters and phenols produced by the yeast. Fruits, spices and other ingredients may also contribute to the aroma and flavor of beer.

5. Flavor- this sensation results from the combination of the sweet, bitter, and sour (acidic, tart) substances detected by the tongue and the aromas that reach the nasal cavity from the throat. Sweetness comes from sugars that the yeast did not ferment (residual sugars). Bread, biscuit, caramel, coffee and chocolate flavors derive from malts that have been lightly to heavily roasted.

Bitterness comes from the hops and to a lesser extent from highly roasted malts; its intensity is measured in International Bitterness Units (IBUs), with most beers receiving values between 10 (hardly bitter) and 80 (very bitter). IPAs frequently have this value printed on the label. Sourness or acidity usually comes from lactic acid produced by bacteria, and sometimes from citrus fruits. People perceive ethyl alcohol in different ways, from tasteless to sweet, bitter and pungent; it is most frequently felt as a warmth that propagates from the mouth to the stomach, many people detect it starting at 7% alc/vol.

6. Balance- relative contribution of malts and hops to beer flavor. In a well-balanced beer both contribute equally; some beers (like brown ales) are maltier, while others (like IPAs) are hoppier.

7. Body- impression of density; beers with little body feel watery, medium-bodied ones feel denser, and full-bodied ones feel thick; somewhat like water, milk, and chocolate milk. Body depends on the amount of residual sugar and protein present in the beer, both derive from the malts.

8. Texture- sensation caused by the effervescence. In some beers, carbon dioxide bubbles sting or feel harsh, in others they feel smooth and creamy. Body and texture are often grouped as mouthfeel.

9. Aftertaste- flavor that remains after swallowing the beer, it varies from almost nonexistent to strong and persistent. Beers with very little or no residual sugar are described as crisp or dry, and leave little or no aftertaste. Beers with abundant residual sugar leave a lasting aftertaste.

10. Alcohol content- amount of ethyl alcohol expressed as a percentage of the volume of beer. For example, a beer with 5% alc/vol has 5 ml of alcohol in every 100 ml of liquid. Beers with less than 5% are known as all-day or sessionable because of their lower impact, while some particularly strong ones are called imperial. Alcohol content depends on beer style and thus is not a measure of quality.

11. Character- appreciation of beer complexity. A beer with little character has little aroma and flavor, feels watery or thin, and has almost no aftertaste; one with a lot of character has a strong aroma, a complex and intense flavor, feels dense, and frequently has a lasting aftertaste.

12. Drinkability- impression of the ease with which a beer can be consumed and repeated; very drinkable beers have less character, are low in alcohol, end quickly and have little aftertaste. Strong beers are the complete opposite: they are

consumed by sips, without haste, and leave a lasting aftertaste.

13. Consistency- large breweries, particularly those with two or more plants, invest in automation, laboratories and tasting panels to ensure that customers always receive the same product. Small breweries generally lack such controls and their beers may vary somewhat from batch to batch.

Classification and styles

Beer can be classified using color (golden, amber, black), origin (American, Belgian, German), alcohol content (low, medium, high), main sugar source (barley, wheat) or by the organisms that ferment it. The last one is used here and beer is divided into three categories: lagers (fermented by yeast adapted to low temperatures), ales (fermented by yeasts adapted to ambient temperatures), and sours (fermented by ale yeast and acid-producing bacteria). Each category is subdivided into styles, substyles or variants that are highlighted in **bold** in the following chapters.

Beer styles were introduced in the mid-1970s and developed during the following decade mainly by English writer Michael Jackson and his American counterpart Fred Eckhardt. There is no world organization in charge of defining the styles, there are only guidelines and users will notice that they sometimes disagree. Four of them are: BJCP Style Guidelines, Brewers Association Guidelines, CraftBeer.com Beer Styles, and Beer Advocate Beer Styles. All are available online.

Styles are useful for predicting what we can expect from a beer, but they don't have clear-cut boundaries and are not static; some brewers follow them closely, others deviate

from them to different degrees, and some pay little or no attention to them, making beers that are difficult to classify. The styles included in the next three chapters are those that the author found and experienced personally.

Lagers

These beers are fermented by *Saccharomyces pastorianus* (named after French microbiologist Louis Pasteur, 1822-1895). The process happens at low temperatures (40 to 58 °F, 5 to 14 °C); under these conditions, the yeast produces fewer esters and phenols, thus the flavor of the beer rests more on the malts and hops, being often described as simpler and cleaner. This process is known as bottom fermentation because at the end of the process the yeast forms clumps (floculates) close to the bottom of the tank.

Traditionally, lagers were matured at very low temperatures for several months, *lagern* being German for to rest and to store. Today, with modern equipment and new yeast strains, they are produced much faster.

Lagers originated during the 15th century in Bavaria (southern Germany) and in neighboring Bohemia (Czechia), and stayed there until the mid-19th century. Until late in that century, when mechanical refrigeration was perfected,

lagers were produced during the fall and winter, fermenting and maturing underground in large caves or cellars cooled with ice from ponds and lakes; the stored beer supplied the demand for spring and summer. Early in the 20th century the large majority of cellars were replaced by refrigerated buildings. Today lagers are fermented and matured in refrigerated tanks. Most of the old cellars have been destroyed, filled in or flooded, but some breweries conserve them and visiting them is the highlight of the tour.

Pilsner- the first pale lager was brewed in 1842 in Pilsen, Czechia; its golden color, pleasant flavor and light body made it an instant success. This type of beer is so popular that pilsner, pale lager and even lager are frequently used as synonyms. More than 90 percent of the beer consumed worldwide derives from this style. Modern pilsner or pale lager is typically yellow-golden, transparent, effervescent, light-bodied, with reduced bitterness and aftertaste, refreshing and easy to drink. Regular versions have around 5% alc/vol, light ones around 4%, ultralights around 3.5%, non-alcoholics up to 0.5%, and 0.0s have a negligible amount or nothing.

The differences between **Czech pilsner** (Bohemian Pilsner) and **German Pilsner** or Pils (developed in the early 1870s) are mostly due to the German water rich in minerals and the hops used in both places. German pilsner is paler, more bitter, more carbonated, and ends drier (crisper).

Munich Helles or simply Helles was born in 1894, the name means pale, clear, brilliant. It is similar to German pilsner, but with more emphasis on the malt and less on the hops. Helles is so popular in Bavaria that it is served by default if no other beer is specified. **Dortmunder** or Dortmunder Export was born during the last third of the 19th century in

the city of Dortmund, where the sulfate-rich water gave it a particular character. It is golden and somewhat maltier but well-balanced by the hops.

The name **Oktoberfestbier** is reserved for the beer sold at the Oktoberfest festival, a strong helles (5.8 to 6.3% alc/vol) made by six Munich breweries: Augustiner, Hacker-Pschorr, Hofbräu, Löwenbräu, Paulaner and Spaten. Some breweries use **Festbier** for their version of Oktoberfestbier, while others use it for their Märzen (sold there previously).

The most popular beer is the New World is **American Lager**, known also as American pale lager, American pilsner and American adjunct lager (because it is made with rice or corn). After Prohibition (1920-1933) the amount of adjuncts increased, that of malt and hops decreased, and the beer gradually lost character until becoming quite low in aroma and flavor. The light and ultralight versions are known as **American Light Lager**.

International Pale Lager is used for pale lagers brewed in Europe, Asia and other places, frequently using corn or rice. **International Dark Lager** is used for similar beers that are dark brown in color. Mexican versions of both are frequently called **Mexican lager**. In the United States, **Malt Liquor** is a strong (over 5.6 % alc/vol) pale lager made with corn and frequently sugar.

Some American brewers make pale lagers using a greater amount of hops and call them **Hoppy Pilsner**, for versions with even more hops and alcohol **Imperial Pilsner** is used. **Italian Pilsner** is used for German pilsners dry-hopped with an extra amount of noble hops. **West Coast Pilsner** is used for pale lagers made with hops typical of West Coast IPAs, if

the hops impart tropical notes they are called **Tropical Lager**. Pale lagers made with New Zealand hops and others of similar character are called **New Zealand Pilsner**, while those seasoned with lime and sometimes also salt are called **Lime Lager**.

Bock- this old beer was born in the town of Einbeck (northern Germany) as an ale but evolved in Munich as a lager. According to most sources, the name originated from pronunciation differences between the two cities, but some sources indicate that bock means male goat, an ancient symbol of fertility and spring (when this beer is most popular). Many bocks include an image of a male goat on the label. Bock is brewed with more malt and therefore has more flavor, body and alcohol (usually 6.0 to 8.0%). Color varies from golden to reddish brown and the sweetness of the malt is partially balanced by the bitterness of the hops.

Maibock or Helles Bock is a golden variant.

Doppelbock- this beer was developed around 1630 in Munich by monks of the order of Saint Francis of Paola, as a beverage very rich malt, ideal for sustenance during fastings. The first version was called Salvator and since then the suffix -ator is associated with these beers. It has been said that the name doppelbock originated among the town's people when they realized that the beer was more intense than bock (doppel means double). Doppelbocks are typically reddish-brown, sweet, with possible notes of caramel, chocolate and dark fruits; alcohol content varies from 6.5 to 12.0%. **Helles Doppelbock** is a golden version made with pale malt.

Amber Lager- this name groups five styles that are not always easily distinguished. All are made with a portion of

dark malt which produces an attractive amber, sometimes reddish color (especially against the light). They are slightly sweet, with roasted malt notes, bitterness balanced by the hops, and frequently finish quite dry. Alcohol content varies from 4.5 to 6.0%.

The first style, **Vienna Lager**, was born in 1841 and was very popular throughout the Austro-Hungarian Empire and in Germany. The beer sold until 1872 at the Oktoberfest festival was an amber lager made in Munich in the style of Vienna lager. The malt used for making this beer is known as Vienna malt. By the end of the 19th century the beer had lost popularity and disappeared in its home country, but Austrian brewers had introduced it to Mexico, where it is still popular.

The second style, **Märzen**, was first brewed in 1872 using Munich malt, a new malt slightly darker than Vienna. The beer was brewed during March (thus its name), and matured until autumn, just in time for Oktoberfest. Although it is no longer sold there, its centuries-old association with the festival explains the alternate name Oktoberfest Märzen, often shortened to Oktoberfest.

The third style, **Rotbier** (Red Beer) originated in Nuremberg and was originally made with ale yeast. By the late 16th century it was brewed as a lager and was very popular in the city, gradually declining until it disappeared. It was resurrected and is popular in Nuremberg and elsewhere in Germany. It is distinguished from the previous styles by its decidedly red color. The beer is sweet, with fruity notes and ends quite dry.

The fourth style, **American Amber Lager**, is a product of the American craft beer movement. It resembles Vienna

Lager and Märzen but tends to be more intense and the American hops stand out more.

The fifth style, **California Common**, originated in San Francisco during the gold rush of the mid-19th century, using lager yeast at room temperature. Under these conditions the yeast produces some fruity esters. The beer is transparent and amber-reddish due to the use of caramel malt. The sweetness of the malt stands out but is well balanced by the bitterness of the hops.

Dunkel- this was the everyday beer in Munich and Bavaria until it was displaced by Märzen in the 19th century. It is copper-reddish to dark brown (*dunkel* means dark). The flavor is dominated by the malt, with toasted notes of caramel; bitterness is moderate and alcohol content generally does not exceed 5.5%.

Czech Dark Lager- this old beer originated in Bohemia, Czechia. Its color varies from dark brown to almost black due to the use of dark malts. Only Czech hops are used in its production. Roasted malt stands out in the flavor, well balanced by the bitterness of the hops. The beer is effervescent and easy to drink. Alcohol content is about 5%.

Black Lager (Schwarzbier)- the very dark or black color of this old German beer is due to the use of heavily roasted malt. The malty flavor may have notes of chocolate and coffee that recall porters and stouts. Alcohol content is around 5.0%.

Baltic Porter- this dark or black beer originated during the mid-19th century from the English porter (an ale), but in the cold Baltic states began to be brewed as a lager. It is made with dark malt and has a sweet toasty note that's frequently

accompanied by a hint of chocolate, but it is more intense and has notes of raisins and other dark fruits. Since more malt is used, the alcohol content is high (7.0 to 10.0%).

Ales

These beers are fermented by *Saccharomyces cerevisiae* (from Latin *cervesia*, *cerveza* is Spanish for beer). The process happens at ambient temperature; under these conditions the yeast produces more esters and phenols, thus the aroma and flavor of the beer are usually more complex than in lagers. This process is known as high fermentation because at the end of the process the yeast forms clumps (flocculates) close to the surface of the tank, although in modern cylindroconical tanks it eventually descends to the bottom.

Ales typically mature for just a few days. They derive from ancient beers and evolved into the current styles mostly in England, Belgium and northern Germany, with recent contributions from the United States. Belgian ales have been recognized by the United Nations' Educational, Scientific and Cultural Organization (UNESCO) as an intangible cultural heritage.

Kölsch- native to the German city of Cologne (Köln), this beer is fermented with ale yeast but is matured at low temperature like a lager. In appearance and flavor it resembles a pale lager: golden-yellow, transparent, light-bodied and with a clean flavor that makes it very easy to drink. The yeast contributes a subtle fruity note. Alcohol content is around 5.0%. American versions made with more intense hops have been called **Hoppy Kölsch**.

Cream Ale- this beer was born in the United States during the mid-19th century, it survived Prohibition and regained its popularity but today is uncommon. Like the previous beer, it is brewed with ale yeast but is matured at low temperature like a lager. Likewise, the yeast produces a subtle fruity note. Unlike kölsch, corn is often used as an adjunct. It is pale yellow, effervescent, light-bodied, ends dry, and is refreshing. In appearance and character it resembles kölsch, American lager and the next style. The name refers to its “smoothness,” not to the use of cream during brewing. The alcohol content varies from 4.2 to 5.6%.

American Blonde (Golden) Ale- this beer was developed by craft brewers during the 1980s to attract pilsner drinkers. It is golden-yellow, with the sweetness well balanced by the bitterness, and develops a short-lasting thin head with fruity aroma provided by the hops. Alcohol content is typically 4.5 to 5.0%. Because it is light-bodied, refreshing, and easy to drink, it is often marketed as a summer beer. The name **Hoppy Blonde** is used for versions made with more hops and resemble a session IPA.

Dorada pampeana (Pampas Golden Ale)- this beer originated in Argentina when craft brewers brewed a golden ale using pilsner malt, Argentine Cascade hops, and ale yeast. It is transparent, with the sweetness of the malt well-

balanced by the bitterness of the hops; it is also effervescent, light-bodied, with a slightly sweet or dry finish, refreshing and easy to drink. Alcohol content ranges from 4.3 to 5.5%. This style is very similar to the preceding one.

Belgian Wheat Beer (Witbier, Belgian white beer)- this beer is native to Flanders, the Dutch-speaking region of Belgium. It was popular for centuries but went extinct in 1957 due to pilsner's great success; fortunately, it was rescued and production resumed in 1966. The modern version is brewed with 30 to 40 percent unmalted wheat, coriander seeds and dried orange peel. Some brewers add other spices. The yeast contributes fruity notes and sometimes clove aroma. Wheat imparts a whitish opaque appearance. The beer is fairly light-bodied, with little hop bitterness, very easy to drink and refreshing. Alcohol content varies from 4.5 to 5.0%. **Double Witbier** has been used for variants with more spices and alcohol.

German Wheat Beer- this very old beer is native to Bavaria, Germany and/or neighboring Bohemia, Czechia. It is brewed with 50 to 70 percent wheat malt. The yeast produces a characteristic clove aroma. The beer is turbid, with little or no bitterness, easy to drink and refreshing. Wheat protein and abundant carbonation produce a thick, creamy, lasting head. **Hefeweizen** (Weizenbier, Weissbier) and **Weizenbock** are golden and differ in alcohol content, the first with approximately 5% and the second with more than 7%. **Dunkelweizen** is amber due to the use of Munich malt, which contributes a toasty or nutty note. In the preceding names, weiss and weizen mean wheat; hefe, yeast; bock, strong; and dunkel, dark.

American Wheat Beer- this beer originated during the 1980s. It is made with 30 to 50 percent wheat malt. The

hops impart a light fruity aroma. There's no clove aroma. The beer is golden, opaque or transparent, and is seasoned with a variety of spices. Like other wheat beers, it is refreshing, pleasant and easy to drink. Alcohol content varies from 4.0 to 5.5%. Filtered, low-wheat versions can be easily confused with an American blonde ale. Some breweries produce a considerably hoppier version that they call **Northwest Wheat Ale**.

English Pale Ale and **English India Pale Ale**- the first English pale ales were made during the second half of the 17th century, when a process was developed to convert coal into coke, which burns cleaner and permits the production of a paler malt (amber, instead of brown). Due to the higher cost of the new malt, the beer was not widely accepted until the early 19th century, when interest for porter beer began to wane. East India pale ale was first brewed during the 1790s as a version made with more hops to protect it during the long sea voyage to India. It was also protected by its lower content of residual sugar, which serves as food for organisms that turn beer sour. It became popular in England around 1850 and was widely exported. In both styles the sweetness of the malt is partially offset by the floral, sometimes slightly citrusy hops. Alcohol content typically does not exceed 5.0 %.

Extra Special Bitter (ESB)- known in the United Kingdom as premium and strong, this is the most intense version of Bitter, the traditional draft ale (cask ale) served in British pubs. The other two styles are standard or ordinary; and best, regular or special. ESB is coppery amber, with a pleasant aroma of roasted malt and a noticeable but not excessive bitterness, the hops provide a delicate note reminiscent of orange. The aftertaste is bitter and rather dry. The differences between Bitter and English Pale Ale, and

between the more intense versions of Bitter and English India Pale Ale have never been clear; it has been said that they are the same beers, the first of each pair served on tap and the second from a bottle. The alcohol content is around 5.0%.

American Pale Ale (APA) and **American India pale ale (IPA)**- these beers were inspired on the English Pale Ale and English India Pale Ale. The first appeared during the 1970s and the second during the mid-1980s. In both, American hops provide intense aromas and flavors, frequently of pine and citrus. American versions also have more alcohol. APAs are less hopped, yellow to amber-colored, usually transparent, and like English pale ales have a good balance between malt sweetness and hop bitterness. IPAs are more intensely hopped; in some, sweetness and bitterness are well balanced, in others hops dominate. The color of IPAs ranges from light yellow to black. Alcohol content in APAs varies from 4.5 to 6.2%, in IPAs it varies from 5.5 to 10% or more.

Session IPAs (All-day IPAs) are lower in alcohol so that two or more can be consumed in one sitting. **Summer IPAs** or **Summer Ales** are particularly light in color and alcohol to make them refreshing and appropriate for a day at the beach. **Double IPAs** (DIPAs), **Triple IPAs** (TIPAs) and **Imperial IPAs** are progressively more intense and contain more alcohol. **West Coast IPAs** (original American IPAs) are transparent or slightly hazy, not very fruity and quite bitter. **East Coast IPAs** (Northeast Coast IPAs, New England IPAs-NEIPAs) are opaque, sweet and their hops produce fruity aroma and taste; due to these characteristics they are also known as **hazy IPAs** and **juicy IPAs**. Beers that combine characteristics of West Coast and East Coast IPAs have

been called **Midwest IPA** and **Southeast IPA**. **Tropical IPA** is used for versions whose hops produce aromas of mango, pineapple, citrus, and other tropical fruits.

Fruit IPAs contain fruit juice, while **Milkshake IPAs** contain lactose (which imparts sweetness and body). The attractive mahogany color of **Red IPAs** and the very dark color of **Black IPAs** (Cascadian Dark Ales) are due to the use of dark malt and black malt; the flavor of the former recalls amber, red and brown ales while that of the latter recalls Irish stouts, in both cases with the aroma and bitterness of an American IPA. **Rye IPAs** are brewed with a portion of rye malt.

Brut IPAs have very little residual sugar and finish very dry. **Cold IPAs** also finish dry but are made with adjuncts (rice, corn or sugar) and are fermented with ale yeast at low temperature or lager yeast at higher than usual temperature. **Belgian IPAs** may be American IPAs fermented with Belgian yeast or Belgian ales made with American hops. **Tart IPAs** (sour IPAs) are acidic, sometimes slightly, sometimes as much as the hops are intense. **Wheat IPAs** (White IPAs) are American wheat beers with significantly more hops and alcohol, or IPAs made with a considerable amount of wheat.

American Amber Ale- this beer originated in the 1990s. It was inspired by the English pale ale and is therefore related to the American pale ale. Amber ale tends to be darker due to the use of more caramel malt, which also imparts a sweeter flavor, a caramel note, and additional body. Hops partially balance the malts. Alcohol content typically ranges from 5.0 to 6.0%, with the exception of some imperial versions. The variant called **American Red Ale** is made with caramel malt and other specially roasted malts, it is sweeter

and the roasted note is more prominent; its attractive red color is best seen against the light, otherwise the liquid appears brown. Several breweries produce a considerably hoppier version that they call **Northwest Red Ale**. Very close to the American Red Ale is the **Irish Red Ale**, which differs perhaps by a drier finish.

Belgian Pale (Amber) Ale- This beer was developed early in the 20th century to compete with the English ales and German pilsners that were invading Belgium. It is amber-colored, transparent and sweetish like an English pale ale but light-bodied and easy to drink like a pilsner; unlike the first, it is made without using sugar as an adjunct. The yeast produces a delicate fruity aroma and the hops partially balance the sweetness of the malt. Alcohol content is around 5.0%.

Brown Ale and Scotch Ale (Wee Heavy)- the first of these beers is mentioned in British texts published in the early 18th century, although it is surely older; the second was developed during the 19th century in Edinburgh. Both are brewed with dark malts and are thus brown (sometimes reddish against the light), transparent, sweet, with notes of caramel, sometimes nuts and even some chocolate. Hops provide some balance. American versions are hoppier and frequently contain more alcohol. The second beer is made with more malt; its flavor is therefore more intense, it has more body and frequently more alcohol. The alcohol content of brown ales starts around 5.0% and that of Scotch ales around 6.0%, with quite high values in imperial versions.

Barley Wine- this name is used for certain dark, high-alcohol English beers that can rival wine and even replace it. The high alcohol content is obtained by using a lot of malt, thus the beer acquires complex flavors that include caramel,

molasses, nuts and dark fruits, in addition to a substantial body. American versions tend to be somewhat paler and hoppier.

Wheat Wine- this beer originated in California during the mid-1980s. It resembles the previous one but tends to be paler (golden to amber) and is brewed with half or more of wheat malt, which contributes smoothness and a note of bread. Hops play a secondary role, partially balancing the malt. It is brewed mostly in the fall for winter consumption.

American Strong Ale- this name is used for American craft beers with more than 7% alc/vol that cannot be comfortably assigned to other styles. The group has no uniformity of color, aroma, or flavor but the sweetness of the malt and the bitterness of the hops are generally in balance.

Porter- this beer originated in London in the early 18th century and quickly became popular among the city's porters. A product of the industrial revolution, it was produced in immense quantities and was very popular during a century and a half, being the first beer exported and sold around the world. To produce a consistent taste, the beer was aged for up to a year and batches of different ages were blended.

The growing acceptance of pale ale during the second half of the 19th century caused a gradual decline in porter sales. Its production ended in England during the 1930s and in Ireland during the 1970's. It was revived by American craft brewers. The original beer was dark brown and very sweet, the modern one is typically black, less sweet, often with notes of coffee and/or chocolate. Hop bitterness is low. Alcohol content ranges from under 5% to very high in imperial versions.

Stout- shortly after porter beer was born, the adjective stout (hefty) began to be used as a name for the strongest versions (stout porters), which over time came to be called simply stouts. Modern porters and stouts are very similar and sometimes a porter is more intense than a stout, but as a rule stouts have more alcohol and coffee or chocolate notes. Body ranges from low to very high in versions made with oats and/or wheat. The alcohol content varies from just over 4.0% to 15.0 % in some imperial stouts aged in bourbon barrels.

Irish dry stouts (for example, Guinness) are brewed with a portion of unmalted roasted barley that produces their characteristic flavor, they are frequently sessionable beers: light body, easy to drink, dry finish and low to moderate alcohol content. **Milk stouts** (sweet stouts, cream stouts) are made with lactose, a sugar that yeast does not ferment and contributes sweetness and body. Oats added during the fermentation of **Oatmeal stouts** contribute body and smoothness. **Pastry stouts** are very sweet and contain ingredients used frequently in confectionery. **Imperial stouts** are intense, full-bodied, contain much alcohol and are frequently aged in bourbon barrels. Although many stouts have notes of coffee and/or chocolate derived from very dark malts, some brewers add coffee, chocolate or both to produce **Coffee stouts**, **Chocolate stouts** and **Mocha stouts**.

White Stout (golden stout, pale stout)- this American beer is golden instead of black. The notes of roasted malt, coffee and chocolate typical of stouts are produced with ingredients such as coffee, chocolate and vanilla. Smoothness and body are obtained by using wheat and/or oats.

Roggenbier (Rye Ale)- this beer was made in Bavaria until the *Reinheitsgebot* prohibited the use of the grain for making beer. It has recently gained popularity among craft brewers, who use a variable amount of rye to complement the barley malt. The beer is golden to red, cloudy, with little bitterness and often has a spicy note.

Belgian Ales- these beers share the following characteristics: use of yeast strains that impart spicy and/or fruity notes, use of spices, use of sugar to increase alcohol content without increasing body, low hop aroma and bitterness, bottle conditioning, abundant effervescence, and dry finish. **Belgian Blonde Ale** is transparent, easy to drink, light-bodied, slightly sweet, with little influence from the hops and with a fruity or spicy note; alcohol content varies from 6.3 to 7.9%. **Belgian Golden (Blonde) Strong Ale** is complex, with more intense fruity and spicy notes, and ends dry; alcohol content varies from 7.0 to 11.0%. **Belgian Dark Strong Ale** gets its color from the use of dark malt and caramel which impart a sweeter and more complex flavor; alcohol content is as in the preceding style.

Trappist ales- these are Belgian Ales brewed within the confines of monasteries of the Trappist order, those brewed in other convents or by commercial breweries with or without a license from a convent are called **Abbey Ales**. There are some ten Trappist breweries, located mostly in Belgium and the Netherlands; the following terms are used frequently to describe the beer: **Enkel** (single- 4.8 to 6.0% alc/vol), **Dubbel** (6.0 to 7.5%), **Tripel** (7.5 to 9.5%), **Quadrupel** or Quad (8.0 to 12.0%). The first and third are golden, the second and fourth are dark. Tripel is equivalent to Belgian Golden Strong Ale and Quadrupel to Belgian Dark Strong Ale. War and social unrest have repeatedly

interrupted the brewing of Trappist beers, for this reason today's recipes date mostly from the 20th century. All Trappist breweries are modern and several produce enough beer to export around the world. The monks make beer mostly in the small breweries, in the large ones they establish public policy and intervene with quality control and administration.

Farmhouse ales- the following three beers are native to southern Belgium and northern France. Historically they were made during the cold months to be consumed during the following summer by seasonal farm workers (*saisoneers*). All were rustic beers, made with the ingredients available in each farm. Initially low in alcohol, modern versions have 5.0 to 8.0% alc/vol.

Saison- the modern version of this Belgian beer is typically golden, opaque due to the use of wheat, slightly sweet with little influence of the hops, light-bodied, brewed with yeast that imparts fruity and spicy notes such as pepper and allspice, bottle-conditioned, highly effervescent, and finishes dry. In the United States, the names farmhouse ale and saison are often used as synonyms. The name **Farmhouse IPA** has been used for hoppier and fruitier versions. **Island Saison** is used for versions that feature citrus and other tropical flavors.

Grisette- this beer is similar to saison but has less body and alcohol. It was consumed by miners instead of farm workers. According to some sources its name derives from the color of the extracted ore, according to others it refers to the color of the uniform used by the women who served the beer.

Bière de Garde- the name of this French beer means beer for keeping due to the custom of storing it until the next year. It differs from the previous two beers because the malt has more presence and the spices are less noticeable.

Sours and other beers

These beers are fermented by *Saccharomyces cerevisiae* and by *Lactobacillus* bacteria, sometimes also *Pediococcus*, that produce lactic acid. Yeasts of the genus *Brettanomyces* participate occasionally and contribute several aromas, one of them recalls leather or horse blankets. Also on the market are yeasts of the genus *Lachancea*, which produce ethyl alcohol and lactic acid.

Although all beers have an acid pH (4.0 to 4.5), lactic acid reduces it to 3.0 to 3.5. Given that the pH scale is logarithmic, the latter values are ten times more acidic and the difference is noticeable. Since strong acidity does not appeal to many, sour beers are frequently sweetened or made with fruit or juice. Hops contribute little or nothing to the character of these beers.

In some sour beers, fermentation and/or maturation occur in wooden barrels and the second process may last months or years. Barrels are important because wood provides a substrate for the growth of yeasts and bacteria that impart aroma and flavor, in addition to allowing the entrance of

oxygen that some microorganisms require for their metabolism. Due to the variation that occurs in beers fermented by more than one organism, batches of the same or different ages are frequently blended to produce a consistent flavor. All beers were to a lesser or greater extent sour until the late 19th century, when *Saccharomyces* was isolated from the mixture of yeasts and bacteria that participated in fermentation.

Lambic- this old beer is native to the vicinity of Brussels, Belgium. It is brewed from early October to late April, when the suitable organisms for fermentation are most abundant in the air. The grain mix contains no less than 30 percent unmalted wheat. The hops are aged for one to three years so that they contribute no bitterness or aroma, they are only used to control populations of certain bacteria. The wort is cooled in a shallow rectangular container called coolship, that is exposed to the environment overnight so that it acquires yeasts and bacteria from the air that enters the building, as well as from the walls and the ceiling. Coolships were used to brew many beers until the first heat exchanger to cool wort appeared in the mid-19th century.

The wort is transferred to European oak barrels, where it comes in contact with *Brettanomyces* and resident bacteria. This type of fermentation is known as spontaneous fermentation because the brewer does not add organisms. Fermentation and maturation last from six months to three years. During this time a microbial succession develops in which one organism creates conditions for the next one, until the beer acquires its final character. Lambic beer is golden, sour, dry, with aromas that recall dark fruits and wine. Straight from the barrel it has little carbonation. Alcohol content varies from 5.0 to 6.0%.

Geuze (gueuze) is made by blending lambics of different ages. The sugar present in the youngest beer is fermented and carbonates the bottled product. Some geuzes are sweetened to reach a larger public, the traditional unsweetened version is called *oude geuze* (old geuze). **Kriek** is made by maturing lambic for several months in contact with cherries, more common in the market is a product made with cherry juice. Fruited lambic is also made with apples, black currants, peaches, raspberries, and strawberries.

Flanders Aged Ales- these old beers are native to Flanders, the Dutch-speaking region of Belgium. They are fermented with a mixture of microorganisms grown in the laboratory (mixed fermentation) and are matured for up to two years in very large wooden barrels. Like lambic, beers of different ages are blended to make the final product. Alcohol content varies from 4.0 to 8.0%. **Flanders Aged Pale** is a golden version. **Flanders Red Ale** is native to West Flanders and is reddish-brown, with notes of cherry and dark fruits, some astringency, and a peculiar vinegary note produced by *Acetobacter* bacteria. The grain mix contains 10 to 20 percent wheat. This beer resembles wine and has been called the burgundy of Belgium, referring to the red wines of Burgundy, France. **Flanders Old Brown** (Oud Bruin) is native to East Flanders and is darker (sometimes almost black), it is also sweeter, less sour, with notes of raisins and other dark fruits, and without the vinegary note. Wheat is not used for brewing it.

Fruited Sour (Fruited Kettle Sour)- the wort of this American beer is inoculated with *Lactobacillus* and when it reaches the desired pH is boiled to kill the bacteria, hops are added and fermentation with *Saccharomyces* proceeds. Fruit or its

concentrate are added during fermentation or maturation. The contrast between the acidity of the beer and the sweetness of the fruits is very pleasant and the style is very popular. **Smoothie sour** is a sweeter, thicker variant, made with additional fruit and lactose. The alcohol content varies from 4.0 to 5.6%.

Berliner Weisse (Berlin wheat beer, Berlin white beer)- the modern version of this old German beer was developed during the 19th century in and around Berlin. The grain mix contains 50 to 60 percent wheat malt. The beer is pale, cloudy, effervescent, with a delicate lemon note, and ends dry; it is said that Napoleon called it the champagne of the north. In Berlin it is served frequently with raspberry (red) or woodruff (green) syrup to balance the acidity, in the United States fruit concentrate is added during brewing. The alcohol content in Germany varies from 2.5 to 3.6%, in the United States it varies from 4.0 to 6.3%.

Gose- this old German beer originated in the town of Goslar but became popular in the city of Leipzig. It resembles the previous beer but it is made with coriander seeds and salt, that impart a lemony spicy note and a slightly salty one. It is effervescent, refreshing and easy to drink. Some breweries add fruit to give their beer a unique flavor. The alcohol content typically varies from 3.8 to 5.0%.

Other beers

Fruit beer and spiced beer- the use of fruits, vegetables and spices in brewing dates to antiquity, preceding by thousands of years the use of hops. The impact of these ingredients depends on the amount used and whether they are added before or after fermentation; in some beers they are barely noticeable, in others they dominate the aroma

and flavor. The base beer and the alcohol content vary greatly. This very popular category also includes beers seasoned with natural flavors, grapefruit being one of the most popular.

Seasonal beer- brewing beer seasonally dates back to times when the ingredients were only available during some months of the year and the temperature was suitable for fermentation, maturation and storage. Although today we can brew almost all beers year-round, some continue to be made seasonally. In temperate climates, session beers are more abundant during the warm months, while strong beers are more common during the cold months. Winter beers, known also as winter warmers and Christmas beers, typically contain spices and more alcohol to "warm the body". Pumpkin beers appear in the fall, and Halloween beers feature ghosts and other creatures on the label. Some beers are made with fresh hops during the annual harvest in the northwestern United States. At the end of summer, Oktoberfestbier is brewed in Munich, and several märzens are brewed in the United States to coincide with the festival.

Radler and shandy- these two summer beverages, the first German and the second English, traditionally consist of equal parts of beer and lemonade. In the United Kingdom the beer is commonly a bitter and in Germany a pale lager or wheat beer. Alcohol content is 2.5 to 3.0% in radler and 4 to 5% in shandy. You can make a simple but refreshing radler by mixing equal parts of pale lager and 7 Up.

How to store beer, signs of aging, beers that can be aged, containers, dates, the beer glass, the ideal temperature

Beer changes over time and should therefore be consumed fresh, while it has the aroma and flavor desired by the brewer. The oxidation reactions that deteriorate beer occur slowly at low temperatures and thus it is best stored refrigerated; it has been determined that at 50 °F (10 °C) beer remains in good condition ten times longer than at 86 °F (30 °F). If you don't have space in the refrigerator, store it in the coolest and darkest place of the house.

The storage area should be dimly lit because light reacts with the hops. The result is known as skunking because the chemical produced is almost identical to the one sprayed by the skunk. A growing number of breweries that package in clear, green, or blue bottles use light-resistant hop extracts.

Signs of aging

The aroma of fresh beer is perceived when the container is opened and frequently while it is being served. A beer ruined by the passage of time has lost its hop aroma and may be too sweet. To detect the midpoint between the extremes and the variation around it one must know beer well. Another clue is a color alien to the style; for example, a reddish tinge in a pale lager (beer darkens with age). Beers that are initially clear may become turbid due to protein coagulation. Many beers develop a wet cardboard odor as they age, hoppy beers have their aroma much reduced and malty ones acquire liquor or sherry notes.

There are some twenty unexpected flavors (off-flavors) that brewers learn to recognize because they indicate that something has gone wrong during brewing, some may be acceptable in low concentration in certain beers and some are typical of certain styles. Three examples are banana (isoamyl acetate), butterscotch (diacetyl), and cloves (4-vinyl guaiacol).

Beers that can be aged

Although all beers are ready to drink when they leave the brewery, some may develop pleasant aromas and flavors as they age. Some beers can be aged a year, others two, others five, some up to ten, and a handful may be aged for decades. A good starting point on this subject is the book *Vintage Beer, A Taster's Guide to Brews that Improve over Time*. The author recommends barley wines, imperial stouts, Belgian dark strong ales, Flanders red and brown ales, and geuzes; Scotch ales and bottle-conditioned saisons can also give good results. Hops play a secondary role in all these beers, most are rich in malt and high in alcohol. As

may be expected, at room temperature beer ages fast, while in the refrigerator (37-40 °F, 2.8 a 4.4 °C) it does so slowly.

Bourbon, a type of American whiskey, is aged in white oak barrels that are burned on the inside to give the liquor its color and flavor. These barrels are used only once and many breweries buy them to age some of their beers, imparting them with bourbon aroma and taste, as well as vanilla and coconut notes from the wood. Also used are barrels made of other woods and used for aging diverse liquors or wines.

Containers

Beer is packaged in glass bottles, aluminum cans and stainless steel or plastic kegs. Bottles remain popular because of tradition and because many people find them attractive and elegant. Home brewers use them frequently because they can be washed and reused. Among their disadvantages are: greater cost, fragility, little recycling, permeability to light (even dark bottles let some light through), and the plastic seal of the crown cap allows the entry of oxygen that can damage the product.

Cans cost and weigh less, are harder to break, are easily recyclable, can be stored on top of each other, and completely block the entrance of light and oxygen. The inside of the can is lined with a thin layer of inert plastic that prevents contact with the aluminum.

The main advantage of kegs for a small brewery is that it does not have to invest in bottling or canning equipment. In addition, many people believe that draft beer is always fresher and tastes better. The main disadvantages are that the beer is only available in bars and other similar places, and that metal kegs must be tracked and recovered to use

them again. Single-use plastic barrels are very convenient but can end up in landfills.

Dates

Although it is not required, many breweries print somewhere on the container a packaging date, a best before (best by) date or both; some write the date following the month, day and year format, while others switch the day and the month. Some use a date where 25151 means the 151th day of 2025. There are more cryptic systems, for example 6245 for the sixth day of the 24th week of 2025. The system used by most breweries can be found online.

However, more important than having a date is knowing what to do with it. If it's a packaging date, how do you know the best before date? If it's a best before date, should you buy the beer if it has passed? Answering these questions is not simple because we don't know how the beer was stored since it left the brewery. Dates are therefore guidelines whose usefulness depend on your knowledge and experience with beer; for example, an imperial stout stored for two months at room temperature may in good condition while a hazy IPA is probably ruined.

Beer has no expiration date, that is to say a date after which consuming it may be harmful. This is so because the wort is boiled for an hour or longer, and packaged beer receives protection from hops, alcohol, low pH and very low oxygen content. In addition, the yeasts and bacteria that damage beer are almost never pathogenic to humans. Realizing that a beer has gone bad due to improper storage or the passage of time is an important step in learning about beer.

The beer glass

Many people drink beer straight from the bottle or can. Flavor can be appreciated this way, but in a clear glass you can also appreciate the aroma, color, thickness and duration of the foam layer, and the lacing that forms as the foam recedes. Beer served in a glass is also less filling because more carbon dioxide escapes from it.

There are glasses for general use and for specific beer styles. Among the first, the most popular are the shaker pint (used in the preparation of cocktails), the nonic pint, and the mug or stein. Among the latter, the pilsner glass is tall and narrow to better show the clarity of pale lagers and the white foam. IPA glasses have a mouth that narrows to condense the aromatic foam. The teku glass, inspired on wine glasses, is frequently used for tasting beer. In Belgium, using the correct glass is so important that a beer is often not served until its glass again becomes available. The great variety of glasses is nonetheless a relatively recent phenomenon, until the mid-20th century beer was served and enjoyed in the glass that was available.

Nucleated glasses have laser-etched lines or logos on the bottom that serve as surfaces or nuclei for bubble formation; these glasses produce a stream of bubbles that join the foam layer. In a perfectly clean non-nucleated glass, it is normal to see few such bubbles (if any) because there are very few or no nuclei where they can form, but the effervescence will be felt in the mouth. The formation of bubbles on the walls of a beer glass is due to the presence of particles or residues of grease or detergent that serve as nuclei; in other words, the glass is not (as it should be) perfectly clean.

To produce a perfectly clean glass, rinse it and fill it halfway with water. Add liquid soap and wash it thoroughly inside and out with a clean sponge, preferably one used only for your beer glass. Pay special attention to the areas you touch with your hands and lips. Rinse the outside with running water until all the soap is gone and repeat the process on the inside. Rinse it twice more on both sides and set it on a dish rack. Don't dry the glass with a cloth or paper towel, both deposit particles that will become nucleation sites.

The ideal temperature

In warm climates beer is generally consumed cold. We take it to the beach in a cooler with ice, and at home sometimes place it in the freezer. That's fine for pale lagers and other beers designed to be refreshing and easy to drink, all of which are fairly low in aroma and flavor.

The other beers deserve to be appreciated and should ideally be served at the temperature recommended by the brewery (some provide it on the label, others on their website). At those temperatures the beer gives off its best aromas and has the flavor desired by the brewer. Since measuring temperatures is tedious, the practical option is to serve the beer at regular refrigerator temperature (37-40 °F, 2.8 a 4.4 °C) and consume it at a rate that allows it to reach the ideal temperature. Another option is to take the beer out of the refrigerator five to fifteen minutes before serving. As a rule, the more character and alcohol a beer has, the less cold it should be served; some complex beers are served around 60 °F (15.5 °C), which is the average recommended temperature for serving red wine.

How to serve, evaluate and buy beer, the role of the distributor, psychology and beer, beer and food, beer and health, light beer

The traditional method of serving beer consists of tilting the glass about 45 degrees and pouring from half to two-thirds of the liquid along the wall, the glass is then raised gradually and the remaining beer is poured into the center. The process is observed and adjustments are made to obtain the desired amount of foam: the liquid can be poured faster or slower, from higher up or closer to the glass. The technique varies slightly for each type of glass. There is nothing wrong with stopping to watch how the head is forming before pouring the remaining liquid.

Beer carbonated in the container develops a yeast sediment that is traditionally consumed in wheat beers. To consume it, leave a finger of liquid in the container, swirl it vigorously several times and pour the liquid on the foam; the yeast will descend like a cascade and darken the beer. To avoid the

sediment pour the beer normally, most of the yeast should remain adhered to the bottom of the container.

How to evaluate beer

For aficionados, evaluating beer is an integral part of enjoying it. To begin the process, pour the beer into a clean glass. Note its color, transparency, and the color, thickness and duration of the foam layer. In humid places transparency should be assessed immediately because water condenses on the glass and clear beer looks opaque. Now bring your nose close to the foam and inhale several times. When you have finished analyzing the aroma, ingest a quantity of liquid, move it from side to side in the mouth and swallow.

Repeat paying attention to the aroma, flavor, effervescence, body and aftertaste. If necessary, swirl the glass to produce more foam and aroma. Finally, answer the following questions (or use this form: <https://archive.org/details/formulevalcerveza>).

1. What does the aroma remind you of; flowers, fruits, bread, nuts, spices, pine? **2.** Is the flavor sweet, bitter or sour; simple or complex? **3.** Are the aroma and flavor similar or is there a clear difference between them? **4.** Does the flavor disappear quickly after swallowing or does it leave an aftertaste? **5.** Is the aftertaste persistent or short-lived? **6.** Does the liquid feel watery, thick, or in between? **7.** How effervescent is the beer; a lot, intermediate or little? **8.** How does the effervescence feel in the mouth; prickly, smooth or creamy? **9.** Did you feel the alcohol? **10.** Did you like it? Would you recommend it? Would you buy it again?

In you did not like the beer, ask yourself: Were you familiar with the style? Maybe the beer surprised you with new aromas and flavors. Some beers are acquired tastes, like a song that at first you don't like, but after listening to it several times it becomes one of your favorites.

People differ in their ability to detect details in beer; for example, we are more sensitive when young, and women are more sensitive than men. We can also perceive aromas and flavors differently depending on where we are, time of day, company, and even mood.

If you want to analyze beer with precision, try to do it under the same conditions, free from distractions and preferably before noon because sensitivity decreases as the day progresses. Professional tasters work in places free from distractions, odors and noise. If you're going to taste several beers, begin with the simplest and leave the most complex one for the end.

How to buy beer

Buying beer is frustrating for someone who knows little about it. Faced with a large variety, confusion may prevail and the purchase will be made almost at random. For the informed buyer the experience is very different. The label indicates the style and you immediately receive a preview of the aroma and taste, you know if it's suitable for a day at the beach, a meeting with friends, a conversation with other beer fans, a lunch with colleagues, or dinner on a special day.

Buy beer where it is kept refrigerated or at least air conditioned, and in the case of bottles, away from windows and artificial lights. If you have doubts about the freshness

of the product, check the best before date of several beers; if they have passed, opt for a place that sells more and moves its inventory faster.

Beer is cheaper in supermarkets, but they usually sell few individual bottles and cans, so you are forced to buy four or six of each one. Gas stations sell more beers individually, allowing you to spend less while tasting a much larger variety. When evaluating beer prices, remember to compare similar products. It is not fair, for example, to compare the price of a pilsner made by a craft brewery with that of one made by a huge automated brewery.

The role of the distributor

Between the brewery and the place where we buy beer is the distributor, someone about whom we know very little but who significantly impacts our experience with beer. Distributors buy from breweries (or importers) and sell to stores; these two interactions determine what beers are on the market and which will disappear. Beers that sell well can remain on the market for many years; those that sell poorly will sooner or later disappear, even if they are exquisite and historically important.

The distributor stores the beer until orders are received and it is delivered to the clients. Some distributors store beer under refrigeration and deliver it promptly, others store it at room temperature for weeks or months.

Psychology and beer

Several psychological factors affect the purchase and enjoyment of beer. For example, labels with antique fonts and illustrations are more attractive to older people, who

value tradition, prestige and elegance; while labels with modern typography, bold colors, and creative art are more attractive to younger people, who lead an active, modern and adventurous life. The label alone may determine who buys and consumes a beer that otherwise could be enjoyed by everyone.

Older people tend to prefer and sometimes only consume bottled beer because this container is traditional and elegant, while younger drinkers prefer cans because they are more portable and recyclable. Consumers who limit themselves to one type of container miss excellent beers.

A pleasant experience with a particular beer in a special place and moment has attached some people to that beer for life, preventing them from enjoying the wide variety of brands and styles available today.

Beer and food

Few people worry about combining beer with food, and when both are being enjoyed, it should matter little. Nevertheless, some people enjoy the experience more when they combine beer styles with particular foods. Many breweries provide pairing ideas on the label or on the beers' website. There are also many resources online and even books on the topic.

The most common suggestion from the experts is to pair beer with foods that have similar aromas and flavors, and which are similarly complex (simple beers with light meals and complex beers with heavy meals). Some examples are a ham and cheese sandwich, with a pale lager; a grilled hamburger with an amber ale; a grilled steak, with a porter; grilled vegetables with a golden ale; a salad rich in different

flavors with a pale ale; sushi with a wheat beer; fish with a tripel or pale ale; spicy food, with an IPA; a simple pizza, with an American blonde ale; pineapple ham with a Bavarian wheat beer (both have clove aroma).

When paired well, beer does not overpower food or vice versa, instead they complement each other and are more enjoyable than either is by itself. Dessert can also be accompanied with beer; for example, chocolate cake or ice cream with a stout, or lemon pie with an IPA rich in citrus notes. Beer can also be part of the dessert, as in a scoop of vanilla ice cream dipped in a stout. A sour beer made with fruit or a pastry stout can be served on their own as dessert.

Beer and health

Beer has been used as a remedy for various ailments and diseases. During almost two centuries, porters and stouts were marketed as nutritious foods and were prescribed by doctors to pregnant and lactating women, weak and underweight people, athletes, the elderly, and even children. Today no beer is prescribed for its nutritional value or possible health benefits and many authorities suggest that alcohol consumption should be minimized or eliminated altogether. It has been said that alcohol is as carcinogenic as tobacco and that it damages the heart and other organs. Given this situation, beer and all other alcoholic beverages should be consumed in moderation.

In 2025, the United States guidelines suggest a maximum daily consumption of 1.2 ounces (35.5 ml) of alcohol for men and half for women due to their smaller average size. This amount is found in two 12-ounce (355 ml) beers with 5% alc/vol, and equals 120 in the following calculation: 12 ounces x 5% alc/vol x 2 beers. If you want to keep your

alcohol consumption within the suggested limit, calculate the amount of beer you consume daily. Here are three examples: Two 11.3 ounce bottles with 4.8% alc/vol: $11.3 \times 4.8 \times 2 = 108.4$ (below the suggested limit). Two 12 ounce bottles with 9.4 % alc/vol: $12 \times 9.4 \times 2 = 216$ (1.9 times the suggested limit). Two 16 ounce cans with 8 % alc/vol: $16 \times 8 \times 2 = 256$ (2.1 times the suggested limit). The same calculation can be made for wine and spirits.

Two alternatives for reducing alcohol consumption are opting for alcohol-free beers (up to 0.5%) and 0.0% beers (with traces of alcohol naturally present in juices and fruits). The flavor of these beers still doesn't match that of the regular versions, but the gap has been closing due to technological advances. Many industrial breweries offer both versions of their main beers and several breweries only produce this type of beer.

Additional information and list of beers

There is a wealth of information about beer online that you can find by searching for keywords. There are websites, blogs, magazines, groups in social networks, documentaries, technical articles, videos, and online courses. A glossary initially prepared for this publication grew into another publication titled *Beer Vocabulary*: <https://archive.org/details/beervocabulary>.

There are also many books on the subject, available in digital, print or both versions. I have read the following: *The Essentials of Beer Style* (Fred Eckhardt, 1989); *Ultimate Beer* (Michael Jackson, 1998); *Beer Basics, A Quick and Easy Guide* (Peter LaFrance, 1995); *Brew Chem 101, The Basics of Homebrewing Chemistry* (Lee W. Janson, 1996); *Prost! The Story of German Beer* (Horst D. Dornbusch, 1997); *Beer Blast, The Inside Story of the Brewing Industry's Bizarre Battles for Your Money* (Philip Van Munching, 1997); *Beer in America, The Early Years—1587-1840* (Gregg Smith, 1998); *Dictionary of Beer & Brewing* (Dan Rabin and Carl Forget, 1998); *Designing Great Beers, The Ultimate Guide to*

Brewing Classic Beer Styles (Ray Daniels, 1998); *Beer, Tap into the Art and Science of Brewing* (Charles Bamforth, 2003); *Radical Brewing: Recipes, Tales & World-Altering Meditations in a Glass* (Randy Mosher, 2004); *Beer School, Bottling Success at the Brooklyn Brewery* (Steve Hindy & Tom Potter, 2005); *Wild Brews: Beer Beyond the Influence of Brewer's Yeast* (Jeff Sparrow, 2005); *Brew Like a Monk: Trappist, Abbey, and Strong Belgian Ales and How to Brew Them* (Stan Hieronymus, 2005); *Ambitious Brew, The Story of American Beer* (Maureen Ogle, 2006); *Beer, A History of Brewing in Chicago* (Bob Skilnik, 2006); *Beer* (Michael Jackson, 2007); *Beer in the Middle Ages and the Renaissance* (Richard Unger, 2007); *Amber, Gold & Black, The History of Britain's Great Beers* (Martyn Cornell, 2010); *The Oxford Companion to Beer* (Garrett Oliver, 2011); *Beer for Dummies* (Marty Nachel & Steve Ettlinger, 2012); *Beyond the Pale Ale; The Story of Sierra Nevada Brewing Co.* (Ken Grossman, 2013); *The Complete Beer Course: Boot Camp for Beer Geeks: From Novice to Expert in Twelve Tasting Classes* (Joshua Bernstein, 2013); *Beerology: Everything You Need to Know to Enjoy Beer... Even More* (Mirella Amato, 2014); *The Ultimate Book of Beers* (Mark Kelly & Stuart Derrick, 2014); *The Craft Beer Revolution: How a Band of Microbrewers is Transforming the World's Favorite Drink* (Steve Hindy, 2014); *Vintage Beer, A Taster's Guide to Brews that Improve over Time* (Patrick Dawson, 2014); *Short Course in Beer- An Introduction to Tasting and Talking About the World's Most Civilized Beverage* (Lynn Hoffman, 2014); *Beer for All Seasons: A Through-The-Year Guide to What to Drink and When to Drink It* (Randy Mosher, 2015); *The Brewer's Tale, A History of the World According to Beer* (Michael Bostwick, 2015); *Brewology, An Illustrated Dictionary for Beer Lovers* (Mark Brewer, 2015); *Proof, The Science of Booze* (Adam Rogers, 2015); *Beer School: A Crash Course in Craft Beer* (Jonny Garrett & Brad Evans,

2016); *The World Atlas of Beer: The Essential Guide to the Beers of the World* (Tim Webb & Stephen Beaumont, 2016); *Wood & Beer, A Brewer's Guide* (Dick Cantwell & Peter Bouckaert, 2016); *The National Geographic Atlas of Beer: A Globe-Trotting Journey Through the World of Beer* (Nancy Hoalst-Pullen & Mark Patterson, 2017); *Tasting Beer: an Insider's Guide to the World's Greatest Drink* (Randy Mosher, 2017); *Lager: The Definitive Guide to Tasting and Brewing the World's Most Popular Beer Styles* (Dave Carpenter, 2017); *The Scratch & Sniff Guide to Beer, A Beer Lover's Companion* (Justin Kennedy, 2017); *Drink Beer, Think Beer: Getting to the Bottom of Every Pint* (John Holl, 2018); *The Craft Beer Dictionary, An A to Z of Craft Beer, from Hop to Glass* (Richard Croasdale, 2018); *Beer: The Story of the Most Celebrated Drink* (TIME Special, 2018); *Stuff Every Beer Snob Should Know* (Ellen Goldstein, 2018); *A Brief History of Lager: 600 Years of the World's Favourite Beer* (Mark Dredge, 2019); *A Natural History of Beer* (Rob DeSalle & Ian Tattersall, 2019); *American Beer History, From the Mayflower to Microbreweries* (Gregg Smith, 2019); *Beer: Taste the Evolution in 50 Styles* (Natalya Watson, 2020); *Beer Drinker's Dictionary* (Gregg and Lisa Smith, 2020); *The Beer Bible* (Jeff Alsworth, 2021); *The Botany of Beer, An Illustrated Guide to More Than 500 Plants Used in Brewing* (Giuseppe Caruso, 2022; publicado en italiano en 2019); *Trappist Beer Travels, Inside the Breweries of the Monasteries* (Caroline Wallace, Sarah Wood & Jessica Deahl, 2023); *In the Beginning Was the Beer: Loads of Interesting Things About Your Favorite Drink* (Dalibor Antunovic, 2023); *The Meaning of Beer, How our Pursuit of the Perfect Pint Built the World* (Johnny Garrett, 2024); *Modern Lager: Techniques, Processes and Recipes* (Jack Hendler & Joe Conolly, 2024); *Malt, Hops, Magic and Passion, The Essence of Beer* (Andy Mitchell, 2024); *A Beginner's Guide to Beer, A Frothy, Frisky and Flavorful*

History of the World's Oldest Adult Beverage (Gilbert Chediak, 2025).

List of beers tasted

Below are the 924 beers that I have tasted and evaluated. All were obtained in Puerto Rico, except four that were acquired in the United States to better understand their styles: Pilsner Urquell, Dos Equis Ambar, Hoegaarden, Reissdorf Kölsch.

ARGENTINA: **Quilmes** Clásica, AUSTRIA: **Stiegl** Radler Grapefruit, Stiegl Radler Lemon, BELGIUM: **Achouffe** Chouffe Cherry, Achouffe Chouffe N'ice, Achouffe La Chouffe Blonde, **Bavik** Super Wit, **Boon** Kriek, **Chimay** Cinq Cents (white), Chimay Cinq Cinquante (green), Chimay Dorée (golden), Chimay Grande Réserve (blue), Chimay Première (red), **Dupont** Saison (Saison Dupont), **Duvel** Blond Ale, Duvel Single Fermented Golden Ale, Duvel Strong Blond Ale, Duvel Tripel Hop Cashmere Belgian IPA, Duvel Tripel Hop Citra Belgian IPA, **Gulden Draak** Classic, Gulden Draak 9000 Quadruple, **Huyghe** Delirium Deliria, Huyghe Delirium Noël, Huyghe Delirium Nocturnum, Huyghe Delirium Red, Huyghe Delirium Tremens, **Kasteel** Nitro Bacchus Cherry Beer, Kasteel Nitro Bacchus Flemish Old Brown, Kasteel Nitro Bacchus Raspberry Beer, Kasteel Nitro Barista, Kasteel Nitro Blond Belgian Ale, Kasteel Nitro Noir Porter, Kasteel Nitro Quad, Kasteel Nitro Rouge, Kasteel Rouge 0, Kasteel Wit, **Lindemans** Apple, Lindemans Cassis, Lindemans Cuvée René Oude Geuze, Lindemans Framboise, Lindemans Kriek, Lindemans Pêche, Lindemans Strawberry, **Orval** Trappist Ale, **Palm** Amber Ale, **Petrus** Cranberry Rosé Fruited Ale, Petrus Hibiscus & Passion Fruit Fruited Ale, Petrus Mango & Pineapple Fruited Ale, **Piraat**,

Rodenbach Grand Cru Red Ale, Rodenbach Fruitage, **St. Bernardus** Abt 12 (quadrupel), St. Bernardus Belgian Wit Ale, St. Bernardus Christmas Ale, St. Bernardus Tripel, **Stella Artois** Imported Lager Beer, **Trappistes Rochefort** 6, Trappistes Rochefort 8, Trappistes Rochefort 10, Trappistes Rochefort Triple Extra, **Westmalle** Dubbel, Westmalle Tripel, **Wittekerke** Authentic Belgian White Beer, Wittekerke Framboise, CANADA: **Sober Carpenter** Organic Session IPA, **Collective Arts** Berry, Banana, Acai & Granola Smoothie Sour, Collective Arts Blueberry, Chocolate, Coffee & Vanilla Sour, Collective Arts Border Crossing IPA, Collective Arts Cherry Pie Sour Imperial Fruited Pastry Sour, Collective Arts Collective Lager, Collective Arts Daily Forecast Mimosa Sour, Collective Arts Emerald Dark Non-Alcoholic, Collective Arts Guava Gose, Collective Arts Hazy Pale, Collective Arts Hazy State NEIPA (Collective Arts Hazy State Session IPA), Collective Arts IPA No. 18 Coconut & Key Lime IPA, Collective Arts IPA No. 20 Citra Four Ways NEIPA, Collective Arts IPA No. 21 Ale Brewed with Guava, Mango, Vanilla & Lactose; Collective Arts IPA No. 22 Sabrolicious Lotus; Collective Arts Jam Up Pineapple & Tangerine Sour, Collective Arts IPA Non-alcoholic, Collective Arts Jam Up The Mash Sour, Collective Arts Life in the Clouds IPA (NEIPA), Collective Arts Mosaic Four Ways, Collective Arts Origin of Darkness 2022: Bourbon Barrell Aged Imperial Stout w/Raspberry, Chocolate & Mint (Dubbess Collab), Collective Arts Origin of Darkness 2022: Madeira Whiskey Barrell Aged Imperial Stout w/Pecans and Coffee (Burial Beer Co. Collab), Collective Arts Origin of Darkness 2022: Port Barrell Aged Imperial Stout w/Vidal Ice Wine (Cloudwater Collab), Collective Arts Origin of Darkness 2022: Wheated Bourbon Barrel Aged Imperial Stout w/Dulce de Leche (Bellwoods Collab), Collective Arts Pomegranate & Grapefruit Sour, Collective Arts Rainbow Sherbet Sour,

Collective Arts Sicilian Lemon Gose, Collective Arts Stranger Than: Chocolate & Coconut Porter, Collective Arts Strawberry Piña Colada Sour, Collective Arts Surround Sound Lotus Double IPA, **Corsaire** La Youkai, **Parallel 49** Craft Lager, Parallel 49 Filthy Dirty IPA, Parallel 49 Jerkface 9000 Northwest Wheat, Parallel 49 Ruby Tears Northwest Red Ale, Parallel 49 Trash Panda Hazy IPA, CHILE: **Kross** Golden Cerveza Pale Ale, Kross Maibock Cerveza Strong Lager, Kross Pils Cerveza German Lager, Kross Stout Cerveza Cream Stout, CHINA: **Lucky Buddha** Enlightened Beer, **Master Gao** Baby Jasmine Tea Lager, Master Gao Puffed Rice IPA, **Tsingtao** Imported Premium Lager, Tsingtao 0.0, DENMARK: **Carlsberg** Premium Beer, DOMINICAN REPUBLIC: **Cervecería Nacional Dominicana** Presidente Pilsener, Cervecería Nacional Dominicana Presidente Pilsener Light, Cervecería Nacional Dominicana The One, ECUADOR: **Latitud Cero** Apachita Belgian Style Wheat Ale, Latitud Cero Catequilla Amber Lager, Latitud Cero Concordia Blonde Helles Export, Latitud Cero Punta Palmar American Style Pale Ale, FRANCE: **Kronenbourg** 1664, Kronenbourg 1664 Blanc, GERMANY: **Allgäuer** Festbier, **Ayinger** Altbairisch Dunkel, Ayinger Bavarian Pils, Ayinger Celebrator Doppelbock, Ayinger Bräuweisse, Ayinger Oktober Fest-Marzen, Ayinger Urweisse, **Clausthaler** Grapefruit, Clausthaler IPA Dry Hopped, Clausthaler Original, **DAB** Dortmunder Dark Beer, DAB Dortmunder Export, **Göller** Dunkel, Göller Steinhauer Weisse, **Henninger** Lager, **Hofbräu** Dunkel, Hofbräu Hefe Weizen, Hofbräu Oktoberfestbier, Hofbräu Original, **Paulaner** Grapefruit Radler, Paulaner Hefe-Weizen, Paulaner Münchner Lager, Paulaner Oktoberfest Bier, Paulaner Oktoberfest Märzen, Paulaner Salvator, Paulaner Weizen-Radler, **Radeberger** Pilsner, **Schöffelhofer** Hefeweizen,

Schöfferhofer Hefeweizen Grapefruit, Schöfferhofer Hefeweizen Passion Fruit, Schöfferhofer Hefeweizen Pineapple, Schöfferhofer Hefeweizen Pomegranate, Schöfferhofer Hefeweizen Watermelon Mint, **Weihenstephaner** Festbier, Weihenstephaner Hefe Weissbier, Weihenstephaner Original Premium Lager, Weihenstephaner Pilsner, Weihenstephaner Vitus Weizenbock, IRELAND: **Guinness** Draught Stout, Guinness Extra Stout, ITALY: **Birra Antoniana** Marechiaro, **Birra Moretti** L'Autentica Premium Lager, **Menabrea** Ambrata Premium Amber, Menabrea Bionda Premium Lager, **Peroni** Nastro Azzurro, **Tre Fontane** Tripel, JAPAN: **Asahi** Super Dry, **Echigo** Premium Red Ale, **Hitachino Nest** Dai Dai Ale IPA, Hitachino Nest Yuzu Lager, Hitachino Nest Red Rice Ale, **Kizakura** Lucky Cat White Ale, Kizakura Lucky Chicken Red IPA, Kizakura Lucky Dog Session IPA, **Kyoto** Matcha IPA, Kyoto White Yuzu, **Orion** The Draft, **Sapporo** Premium Beer, Sapporo Premium Light Beer, MEXICO: **Cervecería Allende** Agave Beer, Cervecería Allende Cien 100 Cerveza Ligera, Cervecería Allende Golden Ale Cerveza Clara, **Corona** Extra, Corona Extra Light, **Dos Equis** Lager Especial, **Modelo** Especial, Modelo Negra, **Pacífico** Clara, **Sol**, NETHERLANDS: **Amstel** Bier Extra, **Bavaria** 0.0 Original Premium, **Buckler** Non-Alcoholic Brew, **Grolsch** Premium Pilsner, **Heineken** Light, Heineken Original, Heineken Silver, Heineken 0.0, NICARAGUA: **Toña** Lager Especial, Toña Light, PORTUGAL: Cerveza República La Tuya, **Ale Foundry** Tropical London Hazy IPA, **Asomante** Biliichi Tropical Lager, Asomante El Grito Lager, Asomante La Jaba BQN Lager, Asomante Patria Light Lager, **Boxlab** Cocotero Toasted Coconut Milk Stout, Boxlab Dos Palmas Lager, Boxlab Mal de Ojo India Pale Ale, Boxlab Serenata American Light Lager, Boxlab & Cervezas Camacho 20

Viajes IPA, Boxlab & Pura Vida Ancestras Rquete Pale Ale, **Brew!!! Taller Experimental** Angelika Farmhouse IPA, Brew!!! Taller Experimental Dakity Pale Ale, Brew!!! Taller Experimental Red Dragon Lager, **Cervecera de Puerto Rico** India Edición Limitada, Cervecera de Puerto Rico La H, Cervecera de Puerto Rico Magna Premium Lager, Cervecera de Puerto Rico Medalla Light, Cervecera de Puerto Rico Medalla Ultra Light, Cervecera de Puerto Rico Silver Key Light, **Cervezas Camacho** Encanto Lager, Cervezas Camacho La muerte de Salcedo New England Style India Pale Ale, **Del Oeste** Bramadero Dry-Hopped IPA, Del Oeste Bucanera Whiskey Bock, Del Oeste Isleña Pilsner, Del Oeste Litoral Helles, Del Oeste Oktoberfest, Del Oeste Passiflora Passion Fruit Ale, Del Oeste Residente Maibock, Del Oeste Residente Tripel, **Don Kairo's Biergarten** Light Lager, **Dragon Stone Abbey** Black Portal Cold Brew Coffee Porter, Dragon Stone Abbey Lost Soul Dark Mexican Lager, Dragon Stone Abbey Nativa Puertorrican Pilsner, Dragon Stone Abbey Saphira Farmhouse Saison, **FOK** Belgian White v. 1.7, FOK Blonde Ale v. 1.2, FOK Easy 13 Porter v. 2.2, FOK Happy Hemp, FOK IPA v.1.5, FOK Pachanga v. 1.6, FOK Pilsner 1295 v.3.4, FOK Red Ale, FOK Red October IPA, FOK The Yard La Peliteñida Blonde Ale Passion Fruit & Orange Peel, FOK 420 CBD Ale, **Jíbaro Brewing** IPA, Jíbaro Brewing Sour Mangó-Piña, **La Bodeguita Bar y Tranvía Bar & Tapas** La Bode Lager, **Lúpulos Hermanos** Tropical Breeze Golden Lager, **Miramar Brewing** Clásico El Sabor de la Victoria, **Ocean Lab** American Wheat, Ocean Lab Baraka Coffee Stout, Ocean Lab Blonde Ale, Ocean Lab Blood Orange Blonde, Ocean Lab Blue Blueberry Ale, Ocean Lab Deep Trip Hazy IPA, Ocean Lab Discovery Pilsner, Ocean Lab Discovery Raspberry Blonde, Ocean Lab Discovery Saison, Ocean Lab

Driftwood Brown, Ocean Lab Experimental Series Batch 19 Irish Red Ale, Ocean Lab Hopdiver IPA, Ocean Lab Hurricaned Harvest Ale 2021, Ocean Lab Hurricaned Harvest Ale 2022, Ocean Lab Hurricaned Harvest Ale 2023 (2024), Ocean Lab IPA, Ocean Lab Mambo Passion Fruit Wheat, Ocean Lab MayaWest Puerto Rican Lager, Ocean Lab Oktoberfest Märzen, Ocean Lab Pale Ale, Ocean Lab Pumpkin Lager, Ocean Lab Ruby Grapefruit Pale Ale, Ocean Lab SJU San Juan Lager, Ocean Lab Stout, Ocean Lab Sun Bay Lager, Ocean Lab Sunset Amber, Ocean Lab Temporal Fresh Hop IPA, Ocean Lab Viva La Chela Mexican Lager, **Ocean Lab & Dragon Stone Abbey** Dragon Roll Japanese Saison, **Old Harbor** Amber Lager, Old Harbor American Pale Ale, Old Harbor American Wheat Ale, Old Harbor Carola Light Lager, Old Harbor Chocolate Porter, Old Harbor Coqui Helles, Old Harbor El Yunque IPA, Old Harbor Hoppy Tides IPA, Old Harbor Irish Red, Old Harbor IPA Pro Series 2 Session IPA, Old Harbor IPA Pro Series 3 Rye IPA, Old Harbor IPA Pro Series 4 Black IPA, Old Harbor IPA Pro Series 5 Double IPA, Old Harbor IPA Pro Series 6 Belgian IPA, Old Harbor IPA Pro Series 7 SMASH IPA, Old Harbor Kofresí Stout, Old Harbor Melon Ale, Old Harbor Melón Fruit Ale, Old Harbor Oktoberfest, Old Harbor Light Ale, Old Harbor Saison French Style Ale, Old Harbor Santo Viejo Pilsner, Old Harbor Taína Blonde Ale, Old Harbor Taína Blonde Ale, Old Harbor Tropical Kviek Ale, Old Harbor Witbier La China, **Old Harbor & Boulevard** Enchantment New Zealand Pils, **Old Harbor & Collective Arts** Hoppy Kölsch, **Reina Mora** La Pajarita Blonde Ale, Reina Mora La Suegra Sour Ale, Reina Mora Le Lo Lai Double Chocolate Stout, Reina Mora Luna de Mar Session IPA, Reina Mora Luna Montuna California Common, Reina Mora Siete Pulgadas Tropical Lager, Reina Mora Spindalis Dry Hopped Ale, Reina Mora Sweet Stout, Reina Mora Todus SMaSH

Pale Ale, Reina Mora Unidad 9 IPA, **Reina Mora & Cervecería del Callejón** Susúa Bière de Garde, **Singing Storm Beer Works** Cocoquí Coconut Cream Ale, Singing Storm Beer Works Frente Frío Cold IPA, **Takabru** Blonde Ale, Takabru IPA, **The Aviator's Brewery** Agüita de Playa Belgian Strong Ale, The Aviator's Brewery Blackberry Parade Blackberry Wheat Ale, The Aviator's Brewery Berry Blueberry Wheat Ale, The Aviator's Brewery Cisne Azul IPA, The Aviator's Brewery Gallo Pinto Red Ale, The Aviator's Brewery Hupia Guayaba Wheat Ale, The Aviator's Brewery Julia Imperial Black IPA, The Aviator's Brewery Vejigante Imperial Stout, SPAIN: **Alhambra** Reserva Roja, Alhambra Reserva 1925, **Cerveces La Gardenia** Rosita Blonde Ale, **Damm** Daura IPA, Damm Daura Lager, Damm Daura Non-alc, Damm Estrella, Damm Inedit, **Hijos de Rivera** Estrella Galicia Helles Exportbier, Hijos de Rivera Estrella Galicia Non-gluten, Hijos de Rivera Estrella Galicia 0.0, Hijos de Rivera 1906 Reserva Especial Helles Bock, **Mahou** Cinco Estrellas, Mahou IPA, **Mica** Cuarzo Ale Premium, Mica Flor de Encina Beer with Spices, Mica Imperial Stout, Mica Oro Ale Premium, Mica Oro Oak Ale Premium, Mica Raíz IPA, **Palax** Artesan Lager, Palax Artesan Session IPA, ST. CROIX: **Leatherback** Acerola Cherry Hefe, Leatherback All Ah We Hazy IPA, Leatherback Angel Fish Amber Ale, Leatherback Bush Life Farmhouse Ale, Leatherback Carite Passionfruit Vanilla Sour, Leatherback Guanabana Double IPA, Leatherback Island Life Lager, Leatherback Lima Picante Blonde Ale, Leatherback Mango Trail Session IPA, Leatherback Oktoberfest, Leatherback Reef Life IPA, Leatherback Sea Walls Smooth Seas Oatmeal Stout, Leatherback The Diplomat Chocolate & Vanilla Stout, Leatherback Thunderbolt Coffee Porter, Leatherback Turtle Tango Kölsch Style Ale, Leatherback V. I. Trail Pils Hoppy Pilsner, UNITED KINGDOM: **Fuller's** ESB, Fuller's London

Porter, **Samuel Smith** Imperial Stout, Samuel Smith Oatmeal Stout, Samuel Smith India Ale, Samuel Smith Organic Chocolate Stout, Samuel Smith Nut Brown Ale, Samuel Smith Organic Lager, Samuel Smith Pale Ale, Samuel Smith Taddy Porter, Samuel Smith Welcome Back Ale, Samuel Smith Winter Welcome Ale, **Traquair** House Ale, Traquair Jacobite Ale, UNITED STATES: **Abita** Amber Lager, Abita Andygator, Abita Barney, Abita Jockamo Juicy IPA, Abita Mimosa, Abita Pecan Ale, Abita Purple Haze Raspberry Lager, Abita Strawberry Lager, Abita Turbodog, **Abomination** Wandering into the Fog Double IPA, **Adroit Theory** Czech Style Pilsner, **Allagash** Brewer's Ridge Saison, **Anchor** California Lager, Anchor Fog Breaker IPA, Anchor Liberty Ale, Anchor Porter, Anchor Steam Beer, **Arcadia** Porter Rico, **Aslin** Clear Nights West Coast-Style India Pale Ale, Aslin No Backsies Hefeweizen, Aslin Power Moves India Pale Ale, Aslin Radler, Aslin Volcano Sour Ale Brewed with Blackberries, Blueberries, Milk Sugar and Vanilla, **Athletic Brewing** Cerveza Atlética Light Copper, Atlantic Brewing Run Wild IPA, Athletic Brewing Upside Dawn Golden, **Barriehouse & Prison Pals** Katya Helles Bock, **Barrier** Deadly Combination with Nelson and Mosaic IPA, Barrier Strictly Speaking New England Style IPA, Barrier 51631 IPA, **Bell's** Amber Ale, Bell's Best Brown Ale, Bell's Big Hearted IPA Imperial IPA, Bell's Change of Heart Experimental IPA (Cold IPA), Bell's Christmas Ale Scotch Ale, Bell's Expedition Stout Russian Imperial Stout, Bell's Flamingo Fruit Fight Lemon-Lime Gose-style Ale, Bell's Flamingo Fruit Fight Passion Fruit and Lime Tart Ale, Bell's Flamingo Fruit Fight Refreshing Raspberry Ale, Bell's Flamingo Fruit Fight Session Ale with Blood Orange, Bell's Flamingo Fruit Fight Session Ale with Ginger & Lime, Bell's Flamingo Fruit Fight Session Sour Ale with Cherry, Bell's Hazy Hearted IPA Hazy IPA, Bell's Hopslam Ale Double IPA,

Bell's Juicy Gossip Pale Ale, Bell's Kalamazoo Stout, Bell's Lager for the Lakes American Lager, Bells Lager of the Lakes Bohemian Pilsner, Bell's Larry's Latest Juicy IPA, Bell's Light Hearted Ale, Bell's LoSun Lo-Cal American Wheat Ale, Bell's Oberon American Wheat Ale, Bell's Oberon Cherry, Bell's Oberon Citrus, Bell's Oberon Eclipse Citrus Wheat, Bell's Oberon Mango Habanero, Bell's Official Hazy IPA, Bell's Oktoberfest Märzen, Bell's Porter, Bell's Rind Over Matter Wheat Ale with Lemon and Orange Zest, Bell's Two Hearted Ale American IPA, **Blue Moon** Belgian White, Blue Moon Harvest Pumpkin Wheat, Blue Moon Iced Coffee Blonde, Blue Moon Lightsky, Blue Moon Mango Wheat, Blue Moon Non-alcoholic Belgian White, **Boquerón** Blonde Ale, Boquerón Caja de Muerto, Boquerón Crash Boat IPA, Boquerón Grapefruit Blonde Ale, Boquerón El Sato Pale Ale, Boquerón Lager, **Boulevard** American Kölsch Golden Ale, Boulevard Barrel-Aged Baltic Porter, Boulevard Barrel Aged Chai Imperial Stout, Boulevard Barrel-Aged Imperial Porter, Boulevard Barrel-Aged Imperial Stout & Barleywine Ale, Boulevard Berry Noir Sour Ale, Boulevard Blue Money Blueberry IPA, Boulevard Bourbon Barrel Quad, Boulevard Brewa Bunga Cove Imperial Golden Brew with Hazelnut and Vanilla, Boulevard Chill Vibes, Boulevard Chocolate-Dipped Cherry Imperial Stout, Boulevard Churro Grande Barrel Aged Imperial Brown Ale with Cinnamon and Natural Flavors, Boulevard Dank 7 Belgian-style IPA, Boulevard Dark Truth Imperial Stout, Boulevard Deep Flux Pale Barleywine Ale, Boulevard Double Barrel Dubbel, Boulevard Dream Vision Orange Vanilla Ale, Boulevard Early Riser Coffee Porter, Boulevard Easy Sport, Boulevard Espresso Martini Stout Wheated Imperial Milk Stout with Coffee and Lactose, Boulevard Five Bourbon Barrel Imperial Stout, Boulevard Imperial Brown Ale with Cinnamon and Vanilla, Boulevard Imperial Porter Tasting Room 2020, Boulevard Imperial Stout Tasting Room 2020, Boulevard Irish

Traditional Red Ale, Boulevard Joker's Wit Double Witbier, Boulevard KVEIK IPA, Boulevard Mango Jungle Sour Uncharted Ale, Boulevard Maple Mood Barrel Aged Imperial Stout, Boulevard Nut Cracker Winter Warmer, Boulevard Proper Pour 2023 Imperial Stout, Boulevard Proper Pour 2024 Imperial Stout, Boulevard Rested Reserve Double Barrel-Aged Wheated Imperial Stout, Boulevard Rum Barrel-Aged Spice Cake Imperial Brown Ale with Natural Flavors and Caramel Color, Boulevard Rye on Rye, Boulevard Single-Wide IPA, Boulevard Southwest BLVD Lager with Salt and Lime, Boulevard Space Camper Alpha Vapor Nebulous IPA, Boulevard Space Camper Cosmic IPA, Boulevard Space Camper Hyper Warp Black IPA, Boulevard Space Camper Juice Nova Superstellar IPA, Boulevard Space Camper Quantum Hop Imperial IPA, Boulevard Space Camper Red Spectra Red IPA, Boulevard Space Camper Star Haze IPA, Boulevard Stuff of Legend Stout, Boulevard Sugarwood Baklava Imperial Brown Ale, Boulevard Tank 7 American Saison, Boulevard Tank 7 Cranberry American Saison, Boulevard Terror from the Deep Double IPA, Boulevard The Calling Double IPA, Boulevard The Sixth Glass Quadrupel Ale, Boulevard 35th Anniversary Ale, Boulevard Tip Your Cap Baseball Beer, Boulevard Tiramisu Stout Ale with Coffee and Natural Flavors, Boulevard Tropic Slam Tart Island Ale, Boulevard Tropical Tank 7 Island Saison, Boulevard Wheat Wine Style Ale, Boulevard Whiskey Barrel Stout Imperial Stout, Boulevard Whittman's More smores Barrel-Aged Stout, **Boulevard & Blackberry Farm Brewery** Carrot Cake Belgian-Style Strong Ale Barrel Aged, **Brooklyn Brewery** Brooklyn Brown Brown Ale, Brooklyn Brewery Brooklyn Lager Amber Lager, Brooklyn Brewery Non-alcoholic Special Effects Hoppy Amber, Brooklyn Brewery Brooklyn Pilsner Crisp Pilsner, Brooklyn Brewery Playa de Brooklyn Lime Lager, Brooklyn Brewery

Pulp Art Hazy IPA, **Bronx Brewery** City Island Sour IPA, Bronx Brewery World Gone Hazy IPA, **Budweiser**, Bud Light, Bud Light Lime, **Busch** Beer, Busch Light, **Ceria** Grainwave Belgian-style White, Ceria Indiewave IPA, **Cigar City** After Sesh, Cigar City Cosmic Crown Belgian-Style Strong Golden Ale, Cigar City Cubano-style Espresso Brown Ale, Cigar City Fancy Papers Hazy IPA, Cigar City Florida Cracker, Cigar City Florida Man Double IPA, Cigar City Frost Proof Belgian-style White, Cigar City Jai Alai IPA, Cigar City Guayabera Citra Pale Ale, Cigar City Margarita Gose, Cigar City Maduro Brown Ale, Cigar City Space Pope IPA, Cigar City Theoretical Jam Wheat Ale, **Civil Society** Beach. Boat. Repeat. Blonde Ale, Civil Society FRESH IPA, **Clown Shoes** Bubble Farm IPA, Clown Shoes Fruitarian Fruited Sour Ale with Red Raspberry and Blood Orange Purée, Clown Shoes Galactica Dank Nebula West Coast Style IPA, Clown Shoes Galactica Double IPA, Clown Shoes Galactica West Coast IPA, Clown Shoes Mango American Kölsch, Clown Shoes Road to Hopland Puerto Rico-style IPA, Clown Shoes Space Cake Double IPA, **Coors** Golden Banquet Beer, Coors Light, **Crazy Mountain** Mountain Little Bit of Crazy Session IPA, Crazy Mountain Mountain Livin Pale Ale, **Evil Twin** Low Life Pilsner, Evil Twin Modern Hipster IPA, **Fat Orange Cat** Baby Kittens Hazy New England Style IPA, Fat Orange Cat All Cats are Gray in the Dark White Stout with Natural Flavors, **Founders** All Day Grapefruit Session Grapefruit Hazy IPA, Founders All Day Haze Session Hazy IPA, Founders All Day IPA, Founders All Day Vacay Session Wheat Ale, Founders All Day West Coast Session West Coast IPA, Founders Breakfast Stout, Founders Centennial IPA, Founders Dirty Bastard Scotch Style Ale, Founders 4 Giants and the Haze of Destiny Imperial Hazy IPA, Founders Frangelic Mountain Brown, Founders Frootwood Cherry Ale aged in Maple Syrup

Bourbon Barrels, Founders Imperial Stout, Founders KBS Chocolate Cherry Imperial Stout, Founders Más Agave Clásica Grapefruit Imperial Gose, Founders Oktoberfest Märzen, Founders Panther Club Porter, Founders Porter, Founders Solid Gold Premium Lager, Founders Unraveled IPA, Founders Velvet Rush Imperial Brown Ale, **Goose Island** IPA, Goose Island Matilda, Goose Island Sophie, Goose Island 312, **Great Lakes** Dortmunder Gold Lager, Great Lakes Midwest IPA, Great Lakes Nosferatu Double Red IPA, Great Lakes Oktoberfest, Great Lakes Vibacious Double IPA, Great Lakes Vibacious Juicy Double IPA, **Hanabi** Bere Helles Style Lager, **Harpoon** Big League Juicy IPA, Harpoon IPA, Harpoon Juicer Hazy IPA, Harpoon Rec. League, **High Point** Ramstein Amber Lager, High Point Ramstein Imperial Pilsner, **Island Brands** Coastal Lager, Island Brands Pomelo Grapefruit, **Jester King** A Pale Green Horse IPA, Jester King Run Club Gose-style Ale, **Keystone** V9, **Kona** Big Wave Golden Ale, Kona Gold Cliff IPA, Kona Hanalei Island IPA, Kona Light Blonde Ale, Kona Longboard Island Lager, Kona Pineapple Pilsner, **LaGrow** Citra Organic Golden Ale, LaGrow Organic APA, LaGrow Organic IPA, LaGrow Organic Imperial Stout, LaGrow Organic Lager, **Lagunitas** IPA, Lagunitas Daytime IPA, Lagunitas Hazy Wonder IPA, Lagunitas Little Sumpin' Sumpin' IPA, Lagunitas Super Cluster IPA, **Margaritaville** Landshark Lager, **M.I.A.** Megamix Pale Ale, M.I.A. Miami Weiss Hefeweizen-style Ale, M. I. A. 305 Golden Ale, **Michelob** Ultra, Michelob Ultra Pure Gold, Michelob Ultra Zero, **Mikkeller** Burst IPA, **Miller** Lite, Miller Sharp's, **Natural Light**, **New Belgium** Fat Tire Amber Ale (Fat Tire Ale), New Belgium Summer Bliss, New Belgium Voodoo Ranger IPA, New Belgium Voodoo Ranger Tropic Force Tropical IPA, **New Holland** Dragon's Milk Crimson Keep Red Ale, New Holland Dragon's Milk Reserve S'mores, New Holland

Dragon's Milk Stout, New Holland Dragon's Milk Tales of Gold, New Holland Dragon's Milk White Stout, New Holland Mad Hatter Midwest IPA, New Holland Peach Space Machine Hazy IPA, New Holland Summer Ale Tart IPA, New Holland Tangerine Space Machine Hazy IPA, New Holland The Poet American Oatmeal Stout, **North Coast** Blue Star Wheat Beer, North Coast Brother Thelonious Belgian Style Abbey Ale, North Coast Old No. 38 Stout, North Coast Old Rasputin Russian Imperial Stout, North Coast PranQster Belgian Style Golden Ale, **O'Doul's** Premium, **Ommegang** Abbey Ale, Ommegang All Hallows Treat Imperial Chocolate Peanut Butter Stout, Ommegang Bourbon Barrel Adoration, Ommegang Dream Patch Fruited Sour, Ommegang Everything Nice Belgian Strong Blonde Ale with Seasonal Spices, Ommegang Giants Hazy IPA, Ommegang Gnomegang Belgian-style Blonde Ale, Ommegang Hennepin Farmhouse Saison Ale with Spices, Ommegang Idyll Days Pilsner, Ommegang Keep it Crunchy Imperial Granola Stout, Ommegang Metal Legion Midnight Lager with Spices, Ommegang Near Rainbows Hazy IPA, Ommegang Neon Boodles Tropical Raspberry Hazy IPA, Ommegang Neon Lights Hazy IPA, Ommegang Nirvana IPA, Ommegang Oak Aged Tripel, Ommegang Oktommegang Prost! Marzen-style Lager, Ommegang Solera Tart Golden Ale, Ommegang Three Philosophers Blueberry Coffee, Ommegang Three Philosophers Double Chocolate, Ommegang Three Philosophers Quadrupel Ale and Belgian Kriek with Cherries, Ommegang Nitro Three Philosophers Quadrupel Ale and Belgian Kriek with Cherries, Ommegang Three Philosophers Wine Barrels, Ommegang 25th Anniversary Ale, Ommegang Triple Fruited Tripel, Ommegang Witte, **Ommegang & de Koninck** Super Bolleke Belgian-style Amber Ale, **Ommegang & New Belgium** Belgian Essence, **Ommegang & Old Harbor** Neon

Tides IPA, **Ommegang**, **Leifmans & Ducatto** Passport Royale Mixed Culture IPA, **One Well** Moral Support Session IPA, One Well Oktoberfest Lager, One Well Opener An Ale for All, One Well Ripped Right New England IPA, One Well Simcoerillo IPA, One Well Tequila Barrel-Aged Only Gose to Show, One Well State of Bean Coffee Blonde, One Well Victory Over Oatmeal Oatmeal Stout, One Well Whoppy IPA, **Oskar Blues** Dale's American Light Lager, Oskar Blues Dale's Pale Ale, Oskar Blues Hazy Blues Juicy IPA, Oskar Blues Mama's Little Yella Pils Bohemian Pilsner, Oskar Blues Old Chub Scotch Ale, Oskar Blues One-Y Hazy IPA, Oskar Blues Ten Fidy Imperial Stout, Oskar Blues Thick Haze IPA, Oskar Blues Tropic Mutant Experimental Series IV, Oskar Blues Western Mutant IPA, **Pabst** Blue Ribbon, Pabst Colt 45, **Pontoon** Crushing Waves Berliner Style Weisse with tart cherries and pineapple, Pontoon New Wave Radical Blonde Ale, **Prision Pals** Amber Lager, Prison Pals Anni-Beersary Bohemian Pilsner, Prison Pals Annoying Orange Smoothie Style Sour Ale with Peaches and Oranges, Prison Pals Barrel Series #1 Imperial Stout Bourbon Barrel Aged, Prison Pals Black Lager, Prison Pals Born to be Free Pale Ale, Prison Pals Double Nelson Double IPA, Prison Pals Cielito Lindo Mexican Style Lager, Prison Pals Dade Moon Witbier, Prison Pals Dorada Pampeana Blonde Ale, Prison Pals D10S Mexican Style Lager, Prison Pals Honey Blonde Ale, Prison Pals Katy Berry Smoothie Style Sour Ale with Raspberry, Blueberry & Blackberry, Prison Pals Mango No. 5 Wheat Ale with Mango, Prison Pals Nelson Hazy IPA, Prison Pals Orange is the New Porter, Prison Pals Premium Lager (Prison Pals GOAT 10 Premium Lager), Prison Pals Right Here Right Now Hoppy Blonde, Prison Pals Stout, Prison Pals Sunshine Promise Hoppy Pilsner, Prison pals Triple Nelson Triple IPA, Prison Pals Verano Pink Lager, Prison Pals Witbier, **Prison Pals & Apache Artesanal** Two of Cups

Mango & Guava Sour Lager, **Prison Pals & Olfactory** Phil the Freedom West Coast Pilsner, **Pudge Rodríguez** 13 Gold, **Red Clay** Half-time Hefeweizen Ale, Red Clay IPA, Red Clay Miura Dark Cape Caribbean Stout, Red Clay Miura Forbidden Blade Black Pilsner, Red Clay Miura West Indies Pale Ale, Red Clay Tres Barbas Mexican Style Lager, **Rincón** B.O.N.U.S. Guava Piña Gose, Rincón Bruma Lager, Rincón Conservación Red Ale, Rincón Década Summer Ale, Rincón Festbier, Rincón Living the Dream DDH NEIPA, Rincón Marejada Summer IPA, Rincón Overhead IPA, Rincón Pale Ale, Rincón Sandy Blonde, **Rogue** Batsquatch Hazy IPA, Rogue Brutal India Pale Ale, Rogue Combat Wombat Rogue Hazy IPA with Blood Orange and Grapefruit, Rogue Dead Guy Ale, Rogue Dead Guy IPA, Rogue Dead Guy Pale Ale, Rogue Dead Guy Pilsner, Rogue Dreamland American Lager, Rogue Hazelnut Brown Nectar, Rogue Honey Kölsch, Rogue Knuckle Buster Cold IPA, Rogue Newport Daze Hazy Pale Ale, Rogue Pumpkin Patch Ale, Rogue Rolling Thunder 2023 Imperial Stout, Rogue Santa's Private Reserve 2023 Toffee Chocolate Stout with Natural Flavors, **Sailfish** Lager, Sailfish Sunrise City IPA, Sailfish White Marlin Wit, **Samuel Adams** American Light Lager, Samuel Adams Blueberry Lager, Samuel Adams Boston Lager, Samuel Adams Cherry Wheat, Samuel Adams Flannel Fest Munich Style Dunkel, Samuel Adams Harvest Helles, Samuel Adams Jack-O Pumpkin Ale, Samuel Adams Oktoberfest, Samuel Adams Rebel IPA, Sam Adams Light, Samuel Adams Porch Rocker Lager Radler, Samuel Adams Summer Ale, Samuel Adams Winter Lager, **Santurce** Acapulco Mexican Lager, Santurce Blonde Ale, Santurce Gose Strawberry Lemonade, Santurce Kölsch, Santurce Lager..., Santurce Pilsner, Santurce Vienna Lager, Santurce West Coast IPA, Santurce Wheat Ale Passionfruit D29, **Santurce/Cupey Brewing** SMaSH Double IPA, **Santurce/**

Prison Pals Session IPA, **Schaefer** Beer, **Second Self** El Velorio Imperial Porter, Second Self Havana Night Guava Sour, Second Self La Fría Lager, Second Self Thai Wheat Ale, Second Self Vejigante Acerola Cherry Smoothie, **Shiner** Bock, Shiner Bohemian Black Lager, Shiner Holiday Cheer, Shiner Oktoberfest, Shiner Ruby Redbird, Shiner Sea Salt & Lime, Shiner Weisse N'Easy, **Shipyard Brewing** Pumpkin Head, Shipyard Brewing Smashed Pumpkin Imperial Pumpkin Ale, **Shock Top** Belgian White, **Sierra Nevada** Celebration Fresh Hop IPA, Sierra Nevada Hazy Little Thing IPA, Sierra Nevada Oktoberfest Amber Märzen, Sierra Nevada Pale Ale, Sierra Nevada Summer Break Session Hazy IPA, Sierra Nevada Summerfest Refreshing Summer Lager, Sierra Nevada Torpedo Extra IPA, **SLO Brew** A-SLO-Brew Tropical Hazy, SLO Brew Blood Orange Cali-Squeeze, SLO Brew Mustang IPA, SLO Brew Original Blonde Ale, SLO Brew Reggae Red, SLO Brew Tío Rodrigo Mexican Lager Cerveza Clara, **Sly Fox** Arctic Fox IPA, Sly Fox Alex's Raspberry Lemon Ale, Sly Fox Coastal Quest IPA, Sly Fox Goat Race Maibock 2024, Sly Fox Grisette, Sly Fox Haze Fix IPA, Sly Fox Helles Golden Lager, Sly Fox Oktoberfest Lager, Sly Fox Pikeland Pils, Sly Fox Rt. 113 IPA, Sly Fox Slugger Unfiltered Pilsner, Sly Fox Vulpulin IPA, **Stillwater** Extra Dry Sake Style Saison Ale, Stillwater Premium Postmodern Beer, **Stone** Anniversary 25 Triple IPA, Stone Anniversary 26 Imperial IPA, Stone Anniversary 27 Lemon Shark Double IPA, Stone Anniversary 28 Hazy Double IPA, Stone Arrogant Bastard Ale, Stone Arrogant Double Bastard Ale, Stone Buenaveza, Stone Dayfall Belgian White, Stone Delicious IPA, Stone Delicious Citrus IPA, Stone Downunderstruck IPA (DIPA), Stone Enjoy By 10.31.22 (also 10.31.23) Hazy IPA, Stone Enjoy By 01.01.23 (also 01.01.24) Unfiltered IPA, Stone Enjoy By 07.04.23 (also 07.04.24) Tangerine & Pineapple IPA, Stone FML Hazy Double IPA,

Stone Hazy IPA, Stone Imperial Star Fawker Hazy IPA, Stone Imperial Stout, Stone IPA, Stone Japanese Green Tea IPA, Stone Neverending Haze IPA, Stone Patio Magic Double IPA, Stone Peak Conditions Hazy Double IPA with added Passion Fruit, Orange & Guava, Stone Ruination IPA (DIPA), Stone Sublimely Self-Righteous Black IPA, Stone Tangerine Express Hazy IPA, Stone Tropic of Thunder Lager, Stone Wøøtstout Imperial Stout Brewed with Pecans, Wheat and Rye, One Quarter Aged in Bourbon Barrels, Stone Xocoveza Imperial Stout inspired by Mexican Hot Chocolate, Stone Xocoveza Tres Leches Imperial Stout, **Terrapin** Frenchy's Blues Berliner Weisse, Terrapin High & Hazy IPA, Terrapin Hopsecutioner IPA, Terrapin Los Bravos Mexican-style Pilsner, Terrapin Love is Love Hefeweizen, Terrapin Luau Passion Fruit-Orange-Guava IPA, Terrapin Watermelon Gose, Terrapin Watermelon Gose Tequila Barrel Aged Reserve, **The Tank** El Farito Southeast India Pale Ale, The Tank Freedom Tower American Amber Ale, The Tank La Playita Hop-Accented Pils, The Tank LO-CA Tropical Blonde Ale, The Tank Oktoberfest Märzen, The Tank Prost Bavarian-style Festbier, **Tox** Fugu IPA, **Tripping Animals** Dolfans Pilsner, Tripping Animals El Crippy Premium Pilsner, Tripping Animals In Bocca al Lupo Italian Style Pilsner, Tripping Animals It's a Grape Thing Sour Ale, Tripping Animals No Names Light, Tripping Animals Powerhaze Blast Sour Ale with Berries, Tripping Animals Sunrise Wheat Wheat Ale with Oranges, Tripping Animals Sunset Serenade DDH Hazy India Pale Ale, Tripping Animals, Tropical Blast Sour Ale with Tropical Lime, **UFO** Maine Blueberry, UFO Raspberry, UFO Strawberry Lemonade Shandy, UFO Triple Berry, UFO White, **Unbranded** Greetings from the 786 Pale Ale, Unbranded Salt & Lime Lager, Unbranded San Benito Pilsner, **Unseen Creatures** Eternal American Lager, Unseen Creatures Irony in a Blue Sky Double India Pale Ale, Unseen

Creatures Mina Vagante Italian Style Pilsner, Unseen Creatures South Point Beach Lager, Unseen Creatures Suits & Skulls Amber Ale, Unseen Creatures The Child Hazy India Pale Ale, Unseen Creatures The Last Breakfast Oatmeal Stout, Unseen Creatures Time Moves Slow Kölsch, **Victory** Berry Monkey Fruited Sour Tripel, Victory Brotherly Love Hazy IPA, Victory Dirtwolf Double IPA, Victory Festbier, Märzen Style Lager, Victory Golden Monkey Belgian-style Tripel Ale, Victory Hopdevil IPA, Victory Juicy Monkey Hazy Imperial IPA, Victory Prima Pils, Victory Sour Monkey Sour Tripel, Victory Summer Love Golden Ale, **Wynwood** Bohemian Raspberry, Wynwood Caribbean Sour, Wynwood Hoppy Chulo Session Hazy IPA, Wynwood La Nueva Premium Amber Lager, Wynwood La Rubia, Wynwood Laces IPA, Wynwood Nutty Blonde Ale, Wynwood Pop's Porter, Wynwood Tamarindo Sour, Wynwood Wyntober Oktoberfest Lager, **Zurc** Hopdusa IPA, Zurc Isla Bonita Coconut Hefeweizen, Zurc Kölonia Kölsch Style Ale, Zurc Legio VII Chocolate Lager, Zurc Parcheza Bohemian Pale Ale, Zurc 1579 German Style Helles Lager (Zurc Sweet Caroline Helles Lager).